

AD-A041 399

CORPS OF ENGINEERS CINCINNATI OHIO
DEVELOPMENT OF WATER RESOURCES IN APPALACHIA. MAIN REPORT. PART--ETC(U)
JUN 70

F/G 8/6

UNCLASSIFIED

1 OF 7
AD:
A041399

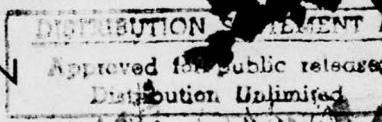
NL



AD A 041 399

90
Development
of
WATER RESOURCES
in
APPALACHIA

MAIN REPORT
PART VI
HISTORY, COORDINATION
and
COOPERATION



ORIGINAL CONTAINS COLOR PLATES: ALL DOCS
REPRODUCTIONS WILL BE IN BLACK AND WHITE

RD 1
DOCS

OFFICE OF APPALACHIAN STUDIES

CORPS OF ENGINEERS



U. S. ARMY



DEPARTMENT OF THE ARMY
OFFICE OF APPALACHIAN STUDIES, CORPS OF ENGINEERS
P. O. BOX 1159
CINCINNATI, OHIO 45201

TO THE READER:

This volume (Volume 15) contains Part VI, "History, Coordination & Cooperation", to the Main Report for Development of Water Resources in Appalachia.

This volume reports the history of the Appalachian Water Resources Survey (AWRS) with the Federal and State agency inter-relationships evolved to coordinate the study. Inter-governmental coordination and a full partnership of Federal, State and Local interests have been hallmarks of this study effort.

Chapter 1 contains the legislative history and pertinent portions of the Appalachian Regional Development Act. (PL 89-4); Guidance from the Chief of Engineers; revisions of the Act; a review of pertinent state participation; and special acknowledgments.

Chapter 2 contains an overview of the organizational relationships among the Appalachian States, Federal Departments and Agencies, Appalachian Regional Commission, Office of Appalachian Studies, Water Development Coordinating Committee for Appalachia, and the State Agencies who contributed to the (Study). A brief text for each of the elements above and organizational charts are used to display the inter-relationships.

Chapter 3 contains the Chronology of Planning History by fiscal year, information on the Plan of Survey, and an exposition of the major planning phases.

Chapter 4 contains the summary of the minutes of the nine Water Development Coordinating Committee Meetings. These minutes indicate the extent and magnitude of the coordination task and its success.

The four Supplements are an extension of Appendix J to the Ohio River Comprehensive River Basin Study. This compendium, in addition to Appendix J, provides a statement of major water laws and programs for the 13 states in Appalachia.

A volume index for the Main Report and its nine supporting Appendices is included on the next two pages for your convenience.

REF ID: A123456789	DATE ISSUED: 01/01/2023	RECEIVED BY: [Signature]
APPROVED BY: [Signature]	NOTICE OF APPROVAL: [Signature]	APPROVAL DATE: 01/01/2023
DISTRIBUTION AVAILABILITY CODES		
1. AUTHORIZED	2. UNAUTHORIZED	3. SPECIAL
BY: [Signature]		

JOHN C. H. LEE, JR.
Colonel, Corps of Engineers
Director

**REPORT
For
DEVELOPMENT OF WATER
RESOURCES IN APPALACHIA**

VOLUME INDEX



MAIN REPORT

Volume Number	Part Number	Chapter Number	Contents
1	I	-	Summary Report
2	I	-	Key Map Folio (By States)
3	II	1	Water Sub-Region A Today
		2	Shaping the Plan for Sub-Region A
		3	Water Sub-Region B Today
		4	Shaping the Plan for Sub-Region B
		5	Water Sub-Region C Today
		6	Shaping the Plan for Sub-Region C
4a	II	7	Water Sub-Region D Today
		8	Shaping the Plan for Sub Region D
		9	Water Sub-Region E Today
		10	Shaping the Plan for Sub-Region E
4b		11	Water Sub-Region F Today
		12	Shaping the Plan for Sub-Region F
5a	II	13	Water Sub-Region G Today
		14	Shaping the Plan for Sub-Region G
		15	Water Sub-Region H Today
		16	Shaping the Plan for Sub-Region H
5b		17	Water Sub-Region I Today
		18	Shaping the Plan for Sub-Region I
		19	Water Sub-Region J Today
		20	Shaping the Plan for Sub-Region J
6	III	1	Introduction to Project Analyses
		2	Tamaqua Local Protection Project
		3	Royal Glen Reservoir
		4	Hipes Reservoir
7	III	5	Clinchfield Reservoir
		6	Roaring River Reservoir
		7	Curry Creek Reservoir
8	III	8	Dalton Reservoir
		9	Coosa River Navigation
		10	Stannard Reservoir
9	III	11	St. Petersburg Reservoir
		12	Greenbrier Reservoirs
		13	Lower Knox Reservoir

REPORT
For
DEVELOPMENT FOR WATER
RESOURCES IN APPALACHIA

VOLUME INDEX

MAIN REPORT (cont'd)

Volume Number	Part Number	Chapter Number	Contents
10	III	14 15 16 17 18 19 20	Whiteoak Reservoir Logan Reservoir Midland Local Protection Project Upper French Broad System (TVA) Yellow Creek Port (TVA) Otocsin (Pa.) Naturealm (Pa.)
11	III	-	Concepts & Methods
12	IV	-	State Water Supplements: Ala., Ga., Ky., Md., Miss., N.Y., N.Car.
13	V	-	State Water Supplements: O., Pa., S.Car., Tenn., Va., W.Va.
14	V	-	History, Coordination & Cooperation
15	VI	-	

APPENDICES

Volume Number	Appendix Designation	Title
16	A	Agriculture, Forestry and Conservation
17	B	Power Supply and Requirements
18	C	The Incidence and Formation of Mine Drainage Pollution
19	D	Water Supply and Water Pollution Control
20	E	Economic Base Study
21	F	Recreation and Aesthetics
22	G	Fish and Wildlife Resources
23	H	Ground Water
24	I	Mineral Industry Resources and Water Requirements

REPORT FOR DEVELOPMENT

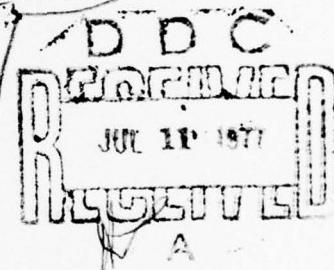
OF

WATER RESOURCES IN APPALACHIA

Main Report.

PART VI, Volume 15.

HISTORY, COORDINATION, AND COOPERATION



12518p.

DISTRIBUTION STATEMENT A

Approved for public release;
Distribution Unlimited

Office of Appalachian Studies

June 1979

ORIGINAL CONTAINS COLOR PLATES: ALL DDC
REPRODUCTIONS WILL BE IN BLACK AND WHITE

410111

JB

DEVELOPMENT
OF
WATER RESOURCES
IN
APPALACHIA

MAIN REPORT
PART VI
HISTORY, COORDINATION & COOPERATION

TABLE OF CONTENTS

<u>Par.</u>	<u>Subject</u>	<u>Page</u>
	CHAPTER 1 - AUTHORITIES FOR THE STUDY	VI-1-
1	INTRODUCTION	1
2	THE APPALACHIAN REGIONAL ACT OF 1965 - PL89-4	2
3	REVISION OF THE ACT (1967) (PL90-103)	4
4	GUIDANCE - CORPS OF ENGINEERS	5
5	FACILITATING STATE PARTICIPATION	6
	CHAPTER 2 - ORGANIZATION	VI-2-
1	INTRODUCTION	1
2	PARTICIPATING FEDERAL AGENCIES	4
3	PARTICPATING STATES	14
4	APPALACHIAN REGIONAL COMMISSION	28
5	THE WATER DEVELOPMENT COORDINATING COMMITTEE FOR APPALACHIA	28
6	OFFICE OF APPALACHIAN STUDIES ORGANIZATION	31
7	FEDERAL DEVELOPMENT COMMITTEE FOR APPALACHIA	32

PART VI
HISTORY, COORDINATION & COOPERATION

TABLE OF CONTENTS
(Cont'd)

<u>Par.</u>	<u>Subject</u>	<u>Page</u>
CHAPTER 3 ~ PLANNING HISTORY		VI-3-
1	CHRONOLOGICAL HISTORY	1
2	THE PLAN OF SURVEY	9
3	BUDGET	10
4	OBJECTIVES	10
5	GUIDELINES	12
6	MAJOR STUDY PHASES	15
7	STUDY COORDINATION	21
8	REPORT COORDINATION	25
CHAPTER 4 - COORDINATION THROUGH THE WATER DEVELOPMENT COORDINATING COMMITTEE FOR APPALACHIA		VI-4-
1	WDCCA COMMITTEE MEETINGS	1
2	PURPOSES OF THE MEETINGS	1
3	FIRST MEETING OF WDCCA - ASHEVILLE, NORTH CAROLINA 20-21 SEPTEMBER 1965	2
4	SECOND MEETING OF WDCCA - BIRMINGHAM, ALABAMA 24-25 FEBRUARY 1966	3
5	THIRD MEETING OF WDCCA - PITTSBURGH, PENNSYLVANIA 6-8 JULY 1966	5
6	FOURTH MEETING OF WDCCA - CINCINNATI, OHIO 26-27 OCTOBER 1966	7
7	FIFTH MEETING OF WDCCA - ATLANTA, GEORGIA 15-16 FEBRUARY 1967	9

PART VI
HISTORY, COORDINATION & COOPERATION

TABLE OF CONTENTS
(Cont'd)

<u>Par.</u>	<u>Subject</u>	<u>Page</u>
8	SIXTH MEETING OF WDCCA - BINGHAMTON, NEW YORK 15-16 JUNE 1967	11
9	SEVENTH MEETING OF WDCCA - KNOXVILLE, TENNESSEE 15-16 NOVEMBER 1967	14
10	EIGHTH MEETING OF WDCCA - CINCINNATI, OHIO 8 MAY 1968	17
11	NINTH (FINAL) MEETING OF WDCCA - CINCINNATI, OHIO 3-5 SEPTEMBER 1969	19

PART VI
HISTORY, COORDINATION, & COOPERATION

LIST OF FIGURES

<u>Figure No.</u>	<u>Title</u>	<u>Page</u>
	CHAPTER 1 - AUTHORITIES FOR THE STUDY	VI-
1-1	THE APPALACHIAN REGION	Opposite 1-1
	CHAPTER 2 - ORGANIZATION	VI-2-
2-1	GOVERNMENTAL RELATIONSHIP	1
2-2	EXAMPLE OF STATE AGENCIES & DEPARTMENTS CONTRIBUTING TO THE APPALACHIAN WATER RESOURCES SURVEY	3
2-3	U.S. DEPARTMENT OF AGRICULTURE - WATER RESOURCE SURVEY - APPALACHIA	4
2-4	SOIL CONSERVATION SERVICE (USDA) PLANNING AREAS IN APPALACHIA	5
2-5	CORPS OF ENGINEERS DISTRICTS AND DIVISIONS IN APPALACHIA	6
2-6	U.S. DEPARTMENT OF COMMERCE, ECONOMIC DEVELOPMENT ADMINISTRATION - AREA BOUNDARIES	7
2-7	U.S. DEPARTMENT OF INTERIOR	8
2-8	FEDERAL POWER COMMISSION REGIONAL OFFICES	9
2-9	DEPARTMENT OF HEALTH, EDUCATION & WELFARE - REGIONS IN APPALACHIA	10
2-10	DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT - REGIONS IN APPALACHIA	11
2-11	U.S. DEPARTMENT OF TRANSPORTATION - FEDERAL HIGHWAY ADMINISTRATION - FIELD REGIONS IN APPALACHIA	12
2-12	TENNESSEE RIVER BASIN IN APPALACHIA	13
2-13	APPALACHIAN ALABAMA	15
2-14	APPALACHIAN GEORGIA	16

PART VI
HISTORY, COORDINATION, & COOPERATION

LIST OF FIGURES
(Cont'd)

<u>Figure No.</u>	<u>Title</u>	<u>Page</u>
2-15	APPALACHIAN KENTUCKY	VI-2- 17
2-16	APPALACHIAN MARYLAND	18
2-17	APPALACHIAN MISSISSIPPI	19
2-18	APPALACHIAN NEW YORK	20
2-19	APPALACHIAN NORTH CAROLINA	21
2-20	APPALACHIAN OHIO	22
2-21	APPALACHIAN PENNSYLVANIA	23
2-22	APPALACHIAN SOUTH CAROLINA	24
2-23	APPALACHIAN TENNESSEE	25
2-24	APPALACHIAN VIRGINIA	26
2-25	APPALACHIAN WEST VIRGINIA	27
2-26	APPALACHIAN REGIONAL COMMISSION STAFF STRUCTURE	29
2-27	OFFICE ORGANIZATION FOR THE APPALACHIAN STUDY	33
2-28	MAJOR CORPS OF ENGINEERS CONTRIBUTORS TO THE APPALACHIAN REPORT	34

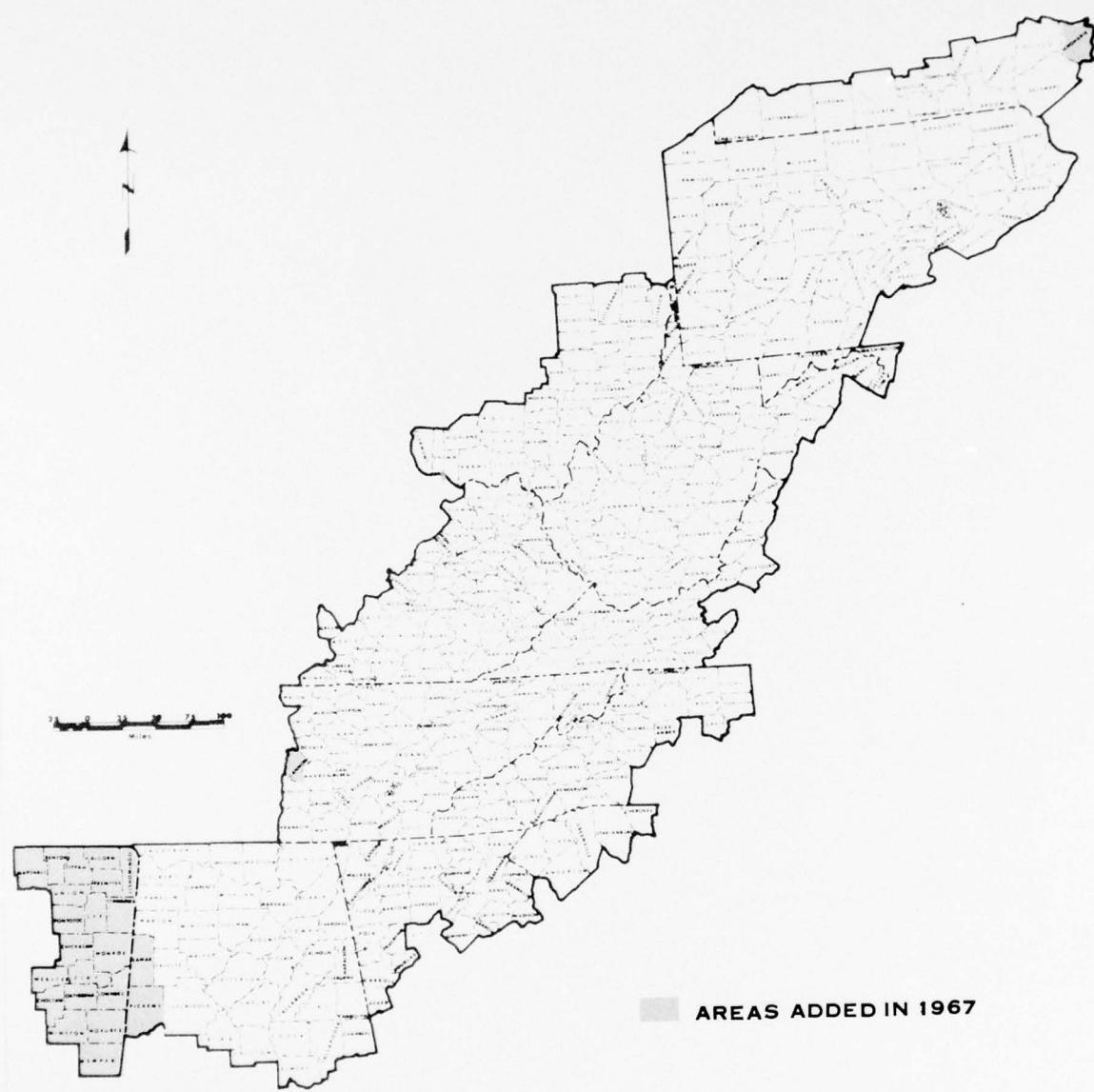
PART VI
HISTORY, COORDINATION & COOPERATION

LIST OF EXHIBITS
(Bound after Chapter 4)

<u>Exhibit No.</u>	<u>Title</u>
1	SUMMARY OF THE APPALACHIAN REGIONAL DEVELOPMENT ACT OF 1965 - PL 89-4
2	REVISIONS OF THE ACT AND ASSOCIATED PROGRAMS AND ACTIONS
3	FIVE CORPS OF ENGINEERS GUIDANCE LETTERS
4	PLAN OF SURVEY - INDEX
5	AGENDAS FOR WATER DEVELOPMENT COORDINATING COMMITTEE FOR APPALACHIA MEETINGS

LIST OF SUPPLEMENTS
(Bound in Order after Exhibits)

<u>Supplement Desig.</u>	<u>Title</u>
A	Alabama Laws, Policies and Programs Pertaining to Water and Related Land Resources
B	Georgia Laws, Policies and Programs Pertaining to Water and Related Land Resources
C	Mississippi Laws, Policies and Programs Pertaining to Water and Related Land Resources
D	South Carolina Laws, Policies and Programs Pertaining to Water and Related Land Resources



THE APPALACHIAN REGION

FIGURE 1-1

DEVELOPMENT
OF
WATER RESOURCES IN APPALACHIA
PART VI
HISTORY, COORDINATION & COOPERATION
CHAPTER 1 - AUTHORITIES FOR THE STUDY

1. INTRODUCTION

This chapter contains historical background, references to the authority which initiated the water resource survey of the Appalachian region and formation of the Office of Appalachian Studies, and the major guidance used in developing the Report For Development of Water Resources in Appalachia.

By the Appalachian Regional Developmental Act of 1965 (PL 89-4), Congress implemented the findings of the President's Appalachian Regional Commission, namely, that the Region needed help to join the economic prosperity of the Nation as a whole. Thus, a broader approach for the planning of water resources investment had to be developed and applied in Appalachia than had generally been done throughout the Nation. In addition to "national efficiency" criteria, the Congress has clearly indicated, through PL 89-4, that water resource planning in Appalachia must be responsive to the problems of economic development in the Appalachian Region.

The Appalachian Region, defined by the 1965 Act and the 1967 Amendments, encompasses portions of twelve states and all of West Virginia. It has a land area of approximately 195,000 square miles and a population of over 18 million persons (Figure 1-1 on the opposite page). Located between major East Coast and Midwest markets, its development or lack of development can have direct bearing on the growth and well being of the Nation. The economic performance of Appalachia has grossly lagged behind that of the Nation, particularly since 1940. Although the reasons for this are complex, major elements in this poor performance record are: the fact of physical and social isolation of the Region's people; changes in technology in the agriculture and mining sectors, which had been major sources of employment; the lack of an adequate tax base for needed public services; environmental deterioration and pollution; and under-employment and unemployment of the labor force (with high out-migration of the youth).

The basic goal of this study of water resources and development in Appalachia has been to determine the role water resources could play in the overall program to loosen or remove constraints to economic development. Water resources investment and development alone cannot, obviously, cure the economic problems within a region. However, this study has demonstrated that water resources development is an integral and essential part of an overall program for regional economic growth. Water resources

investment can provide part of the social overhead capital that is lacking in many areas of the Region, and in conjunction with other programs, can generate the economic response that will bring the Region to a higher level of well-being.

2. THE APPALACHIAN REGIONAL DEVELOPMENT ACT OF 1965 - PL 89-4

The Appalachian Regional Development Act of 1965 (PL 89-4) created the Appalachian Regional Commission (ARC) and designated specific responsibilities for an overall program to improve the condition of Appalachia to various Federal departments and agencies. The Secretary of the Army was directed to prepare a comprehensive plan for the development and efficient utilization of water and related resources of the Appalachian Region. Exhibit 1, bound after Chapter 4, contains a full summary of the Act.

The statement of purpose of the Act indicates the scope of the studies to be conducted under its authority.

Section 2. The Congress hereby finds and declares that the Appalachian region of the United States, while abundant in natural resources and rich in potential, lags behind the rest of the Nation in its economic growth and that its people have not shared properly in the Nation's prosperity. The region's uneven past development, with its historical reliance on a few basic industries and a marginal agriculture, has failed to provide the economic base that is a vital prerequisite for vigorous, self-sustaining growth. The State and local governments and the people of the region understand their problems and have been working and will continue to work purposefully toward their solution. The Congress recognizes the comprehensive report of the President's Appalachian Regional Commission documenting these findings and concludes that regionwide development is feasible, desirable, and urgently needed. It is, therefore, the purpose of this Act to assist the region in meeting its special problems, to promote its economic development, and to establish a framework for facilities essential to its growth and attacking its common problems and meeting its common needs on a coordinated and concerted regional basis. The public investments made in the region under this Act shall be concentrated in areas where there is a significant potential for future growth, and where the expected return on public dollars invested will be the greatest. The States will be responsible for recommending local and State projects, within their borders, which will receive assistance under this Act. As the region obtains the needed physical and transportation facilities and develops its human resources, the Congress expects that the region will generate a diversified industry, and that the region will then be able to support itself, through the workings of a strengthened free enterprise economy.

Further in the Act, Section 206 provides the particular authority for this Report. The Section is quoted below in its entirety.

WATER RESOURCE SURVEY

Section 206. (a) The Secretary of the Army is hereby authorized and directed to prepare a comprehensive plan for the development and efficient utilization of the water and related resources of the Appalachian region, giving special attention to the need for an increase in the production of economic goods and services within the region as a means of expanding economic opportunities and thus enhancing the welfare of its people, which plan shall constitute an integral and harmonious component of the regional economic development program authorized by this Act.

(b) This plan may recommend measures for the control of floods, the regulation of the rivers to enhance their value as sources of water supply for industrial and municipal development, the generation of hydroelectric power, the prevention of water pollution by drainage from mines, the development and enhancement of the recreational potentials of the region, the improvement of the rivers for navigation where this would further industrial development at less cost than would the improvement of other modes of transportation, the conservation and efficient utilization of the land resource, and such other measures as may be found necessary to achieve the objectives of this section.

(c) To insure that the plan prepared by the Secretary of the Army shall constitute a harmonious component of the regional program, he shall consult with the Commission and the following: the Secretary of Agriculture, the Secretary of Commerce, the Secretary of Health, Education, and Welfare, the Secretary of the Interior, the Tennessee Valley Authority, and the Federal Power Commission.

(d) The plan prepared pursuant to this section shall be submitted to the Commission. The Commission shall submit the plan to the President with a statement of its views, and the President shall submit the plan to the Congress with his recommendations not later than December 31, 1968.

(e) The Federal agencies referred to in subsection (c) of this section are hereby authorized to assist the Secretary of the Army in the preparation of the plan authorized by this section, and the Secretary of the Army is authorized to enter into and perform such contracts, leases, cooperative agreements, or other transactions as may be necessary to the preparation of this plan and on such terms as he may deem appropriate, with any State, or any political subdivision, agency, or instrumentality thereof, or with any person, firm, association, or corporation.

(f) The plan to be prepared by the Secretary of the Army pursuant to this section shall also be coordinated with all

comprehensive river basin plans heretofore or hereafter developed by United States study commissions, interagency committees, or similar planning bodies, for those river systems draining the Appalachian region.

(g) Not to exceed \$5,000,000 of the funds authorized in section 401 of this Act shall be available to carry out this section.

3. REVISION OF THE ACT (1967) (PL 90-103)

In 1967, Congress amended the original Appalachian Regional Development Act (PL 89-4). The portions of the amendments most concerning the water resources survey were: (1) the addition of twenty-four counties to Appalachia, and (2) the acid pollution study addition.

Section 120 of the amendment, part (b) authorizes the acid pollution study. Pertinent portions of this section are quoted below:

Section 120. Section 302 of the Act, entitled "GRANTS FOR ADMINISTRATIVE EXPENSES OF LOCAL DEVELOPMENT DISTRICTS AND FOR RESEARCH AND DEMONSTRATION PROJECTS", is amended by (1) striking out subsections (a) through (c); (2) redesignating subsection (d) as subsection (e); and (3) inserting the following new subsections (a) through (d):

"(b) The Commission is authorized to make a survey and study of acid pollution in the region resulting from mining activities and the effects of such pollution, in full cooperation with the Secretary of the Interior and other appropriate Federal, State, and local departments and agencies, with the objective of developing a comprehensive action program for the appropriate control, reduction, or elimination of such pollution in the region or the effects of such pollution. The Commission shall submit to the President a report, including specific recommendations for such program and for the policies under which it should be conducted, and the President shall submit the report to the Congress, together with his recommendations, not later than March 31, 1969. The study shall, among other matters --

"(1) Identify sources of acid mine pollution in the region and their type, area, ownership, and other characteristics; the relative contribution of each source; and the impact of each source on water quality in the stream affected.

"(2) Identify present and potential water-using and other activities which are affected by acid mine pollution in the region, or originating in the region, and the economic and social costs and effects attributable to such pollution.

"(3) Identify known methods and costs for the control and abatement of acid mine pollution.

"(4) Estimate economic and social benefits, public and private, that are likely to result from reducing to various levels acid mine pollution in the streams of the region and identify the types of beneficiaries and the relative distribution of the benefits to such beneficiaries.

"(5) Consider the appropriate roles of Federal, State, and private interests in programs for the control, reduction, or elimination of acid mine pollution in the region and the relative costs which each should bear, including specifically (A) the extent, if any, to which private interests can bear the costs of such programs within the economics of mining activity, (B) the effectiveness of past action by Federal, State, and local units of government in remedying or controlling the adverse effects of acid mine pollution, (C) relationships which might be established among Federal, State, and local units of government, and with private interests, or implementing and funding such programs, and (D) the need for appropriate Federal and State legislation, including adequate enforcement provisions, for such programs.

"(6) Formulate a program for the appropriate control, reduction, or elimination of acid mine pollution in the region, including the identification of specific objectives and costs, with due consideration to: (A) the developmental effects of the program, (B) the economic benefits of the program in relation to costs, (C) the social effects of the program, (D) the avoidance of unwarranted financial gain to private interests, and (E) the types and sources of aid required to accomplish the program."

Exhibit 2, bound after Chapter 4, contains a summary of the amendment to the Appalachian Regional Development Act (PL 89-4).

4. GUIDANCE - CORPS OF ENGINEERS

The Secretary of the Army assigned responsibility for preparation of the studies required under Section 206 to the Chief of Engineers, U.S. Army, who in turn formed the Office of Appalachian Studies.

In addition to the Act, specific guidance was furnished to the Office of Appalachian Studies by the Office, Chief of Engineers (OCE). Senate Document 97 (87th Congress, 2nd Session) dated 15 May 1962, entitled Policies, Standards, and Procedures in the Formulation, Evaluation, and Review of Plans for Use and Development of Water and Related Land Resources, was utilized for basic concepts to be employed in the evaluation procedures subsequently developed (see particularly Part IV of this Report, Concepts and Methods). Senate Document 97, prepared under the direction of the concerned Cabinet members, presents a substantially broadened philosophy and an expanded viewpoint of the objectives to be used in planning and development of water and related land resources of the nation to serve the needs of all of the people. Specifically it provides that "All viewpoints - national, regional, state and local - shall be fully considered and taken into account in planning resource use and development".

The Index to Appalachian Guidance, below, indicates the scope and nature of the guidance.

INDEX TO APPALACHIAN GUIDANCE

These letters are reproduced in full in Exhibit 3.

<u>Number</u>	<u>Letter Subject</u>	<u>Date</u>
1	Special Guidance for Appalachian Studies	1 July 1965
2	Special Guidance for Appalachian Studies (Supplementary)	27 December 1965
3	Engineering Studies for Water Resources Development in Appalachia	13 December 1966
4	Criteria for Use in Comprehensive Surveys and Other Investigations in Appalachia	25 May 1967
5	Guidance for Plan Formulation Studies. Appalachia Water Resource Survey	3 November 1967

5. FACILITATING STATE PARTICIPATION

The organizational pattern for coordinating the overall Appalachian program followed by the member Governors of the ARC included appointing a Coordinator or Coordinating Group to provide liaison between federal, state, local and ARC planning groups. Most of the Governors appointed representatives from within a division of the state Department of Commerce or similar department. This resulted in that division, or the entire department, becoming the coordinating group. Alabama, Kentucky, New York, North Carolina, Ohio, Pennsylvania, Virginia and West Virginia were so organized. Governor Tawes of Maryland appointed a planning consultant as Coordinator, with the alternate from the Department of Economic Development. An Appalachian Advisory Commission was set up in Greenville by Governor McNair of South Carolina. Executive Assistants were appointed in Georgia and Tennessee to coordinate state planning with the ARC and Federal agencies. Governor Rockefeller later set up an Office of Planning Coordination in New York with its director responsible for coordinating ARC (and other) planning with state departments. Coordination was excellent by the second year, 1966.

CHAPTER 2 - ORGANIZATION

1. INTRODUCTION

Many agencies, Federal and State, contributed to the conduct of this survey and to developing this report (See Figure 2-1). This Chapter describes the interrelationships among these several agencies.

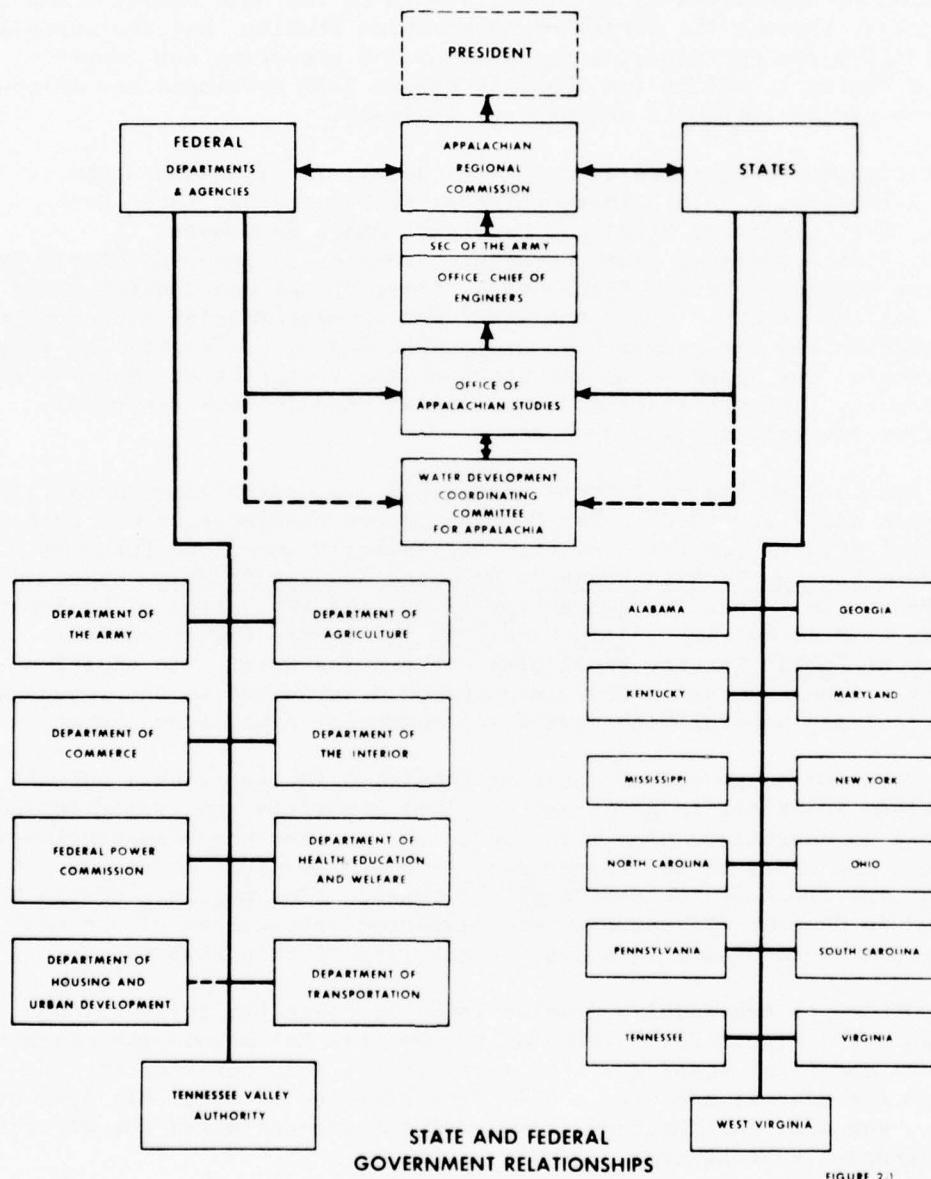


FIGURE 2-1

The Federal Agencies and Departments are described in detail in paragraph 2 and Figures 2-3 through 2-13. They include the Department of Agriculture, Corps of Engineers (Department of Army), Department of Commerce, Federal Power Commission, Department of Health, Education and Welfare, Department of Housing and Urban Development, Department of Interior, Department of Transportation, and the Tennessee Valley Authority. All of these agencies contributed information to the report. Each agency cooperated and coordinated its inputs with those of other agencies to facilitate the development of the report, either through preparation of appendices or by direct inputs to the Main Report. The Corps of Engineers, through the Office of Appalachian Studies, had the overall responsibility for coordinating the studies and preparing the report. The Corps District Offices (as shown in Figure 2-5) developed the majority of sub-regional reports and project analyses.

Participating States are described in detail in paragraph 3 and Figures 2-14 through 2-26. These thirteen states are New York, Pennsylvania, West Virginia, Virginia, Maryland, Ohio, Tennessee, Kentucky, North Carolina, South Carolina, Georgia, Alabama and Mississippi. The states developed "State Supplements" (Part V) and coordinated their efforts for the report through the Water Development Coordinating Committee for Appalachia and the Appalachian Regional Commission. Figure 2-2 displays, as an example, the agencies in the State of Mississippi that contributed to the report. The other states have similar agencies that supplied information for each particular state.

The Appalachian Regional Commission (ARC), is described in detail in paragraph 4 and Figure 2-27. The Commission coordinated economic data and several studies for this report. Particularly important for this report were The Appalachian Location Research Studies Program conducted by the B. Fantus Co., Inc. and Recreation As An Industry, prepared by Robert R. Nathan Associates, Inc., Acid Mine Drainage Study, (ARC), and the Inventory of Public Service Facilities, (Brunswick Corp). In addition the staff of the Commission developed economic data used in the report and was particularly helpful with review and comments on portions thereof.

The Water Development Coordinating Committee for Appalachia (WDCCA) is described in detail in paragraph 5. This committee was appointed and functioned to coordinate plan elements to ensure that the plan developed would meet the needs of the region and, to every possible extent, would represent all views of the people of the region. The meetings of the WDCCA (reviewed in Chapter 4), explored and developed resolutions of the many problems perceived by all agencies contributing to this report.

The Office of Appalachian Studies (APS) is described in detail in paragraph 6 and Figure 2-28. APS was responsible for developing planning procedures and final preparation of this report, incorporating the inputs from the several agencies above. The Director of APS, Col. John C. H. Lee, Jr., was also the Chairman of the WDCCA and coordinated the efforts of the agencies represented.

GOVERNOR OF MISSISSIPPI

<u>State Agencies</u>	<u>Political Subdivisions</u>	<u>Special Purpose Districts</u>
<u>State Board of Water Commissioners</u>	<u>County Board of Supervisors</u>	<u>Drainage Districts</u>
<u>Mississippi Agricultural and Industrial Board</u>	<u>Port Commissioners</u>	<u>County Commissioners</u>
<u>Mississippi Geological Survey Board</u>	<u>Municipal Auths.</u>	<u>Local Commissioners</u>
<u>Mississippi Park Commission</u>	<u>Port Commissioners</u>	<u>Swamp Land Districts</u>
<u>State Board of Health</u>		<u>Water Management Distr.</u>
<u>Mississippi Air and Water Pollution Control Commission</u>		<u>Soil & Water Cons. Distr.</u>
<u>State Forestry Commission</u>		<u>Flood Control Districts</u>
<u>State Game and Fish Commission</u>		<u>Master Water Management Districts</u>
<u>State Soil Conservation Committee</u>		<u>River Basin Districts</u>
<u>State Highway Commission</u>		<u>Pat Harrison Water-way District</u>
<u>Board of Trustees Institutions of Higher Learning</u>		<u>Pearl River Basin Development District</u>
<u>Mississippi State University</u>		<u>Big Black River Basin District</u>
<u>Water Resources Research Institute</u>		<u>Tombigbee River Valley Water Management District</u>
<u>Mississippi Research and Development Center</u>		

**EXAMPLE OF STATE AGENCIES AND
DEPARTMENTS CONTRIBUTING TO THE
APPALACHIAN WATER RESOURCES SURVEY**

In order to further interagency coordination, the Federal Development Committee For Appalachia was formed by executive order. The scope of this committee's work is explained in paragraph 7.

The following paragraphs and figures detail the previously discussed organizations.

2. PARTICIPATING FEDERAL AGENCIES

The following Figures describe the Federal Agencies and Departments that contributed to and cooperated in writing the Report, Development of Water Resources in Appalachia. The particular contributions are exemplified in particular portions of the report and its appendixes.

DEPARTMENT OF AGRICULTURE - The USDA contribution to this report is contained in Appendix A, Supplement B to Appendix F, the Sub-regional reports (Part II) and the Summary Report (Part I). The Departmental organization arrangements for participating in this study are shown on Figure 2-3. Figure 2-4 depicts the Soil Conservation Service's Planning Areas in Appalachia.

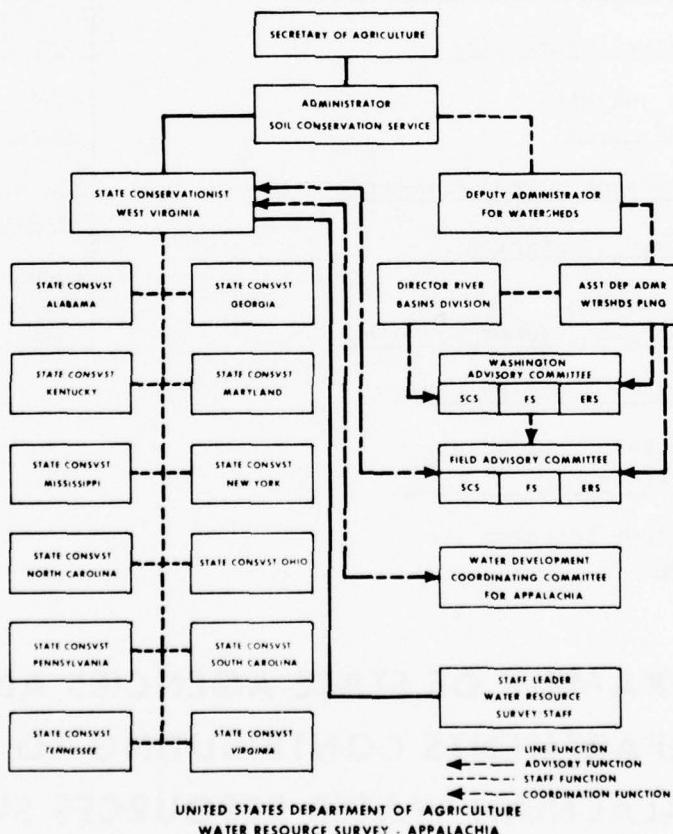
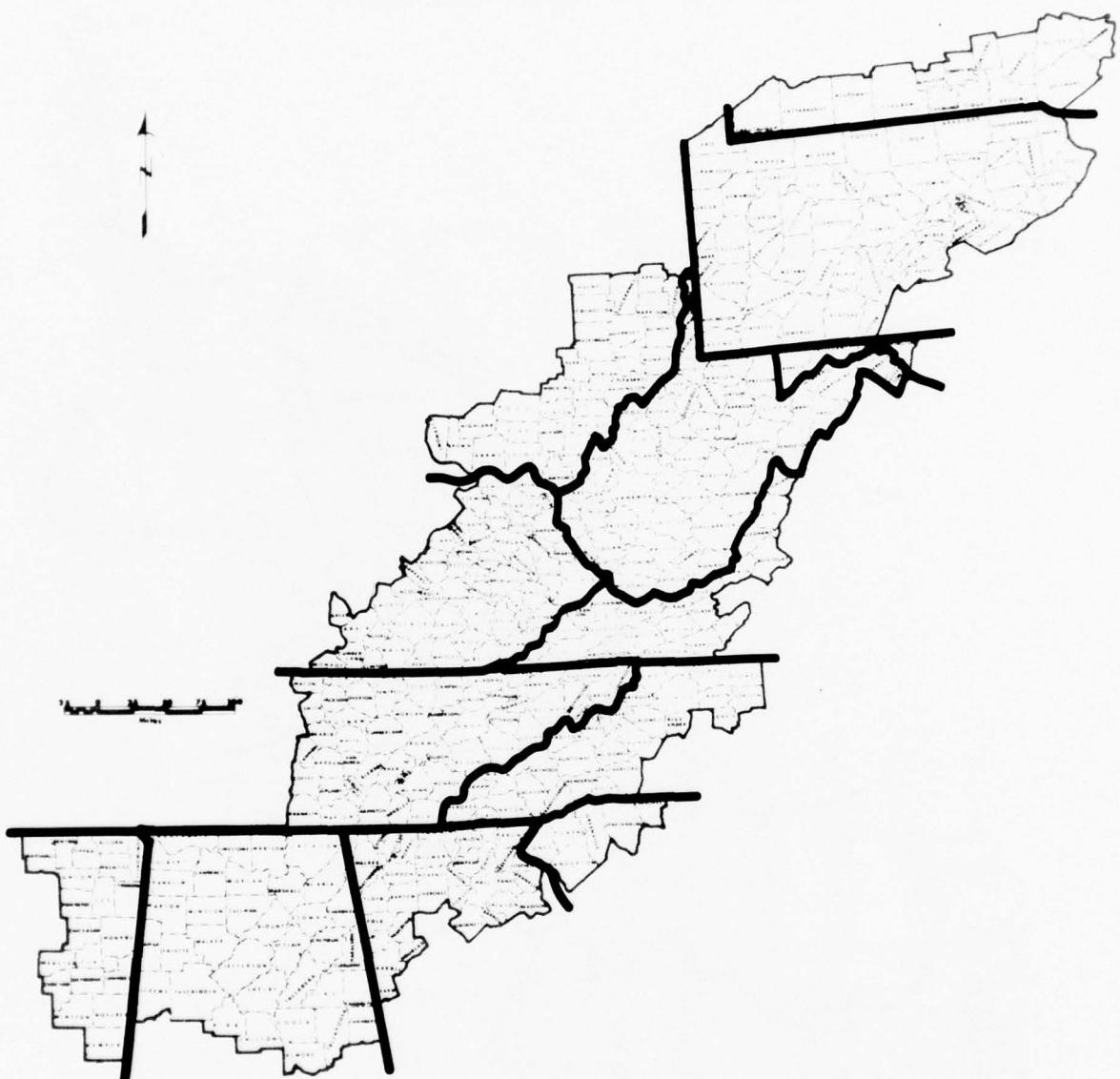


FIGURE 2-3

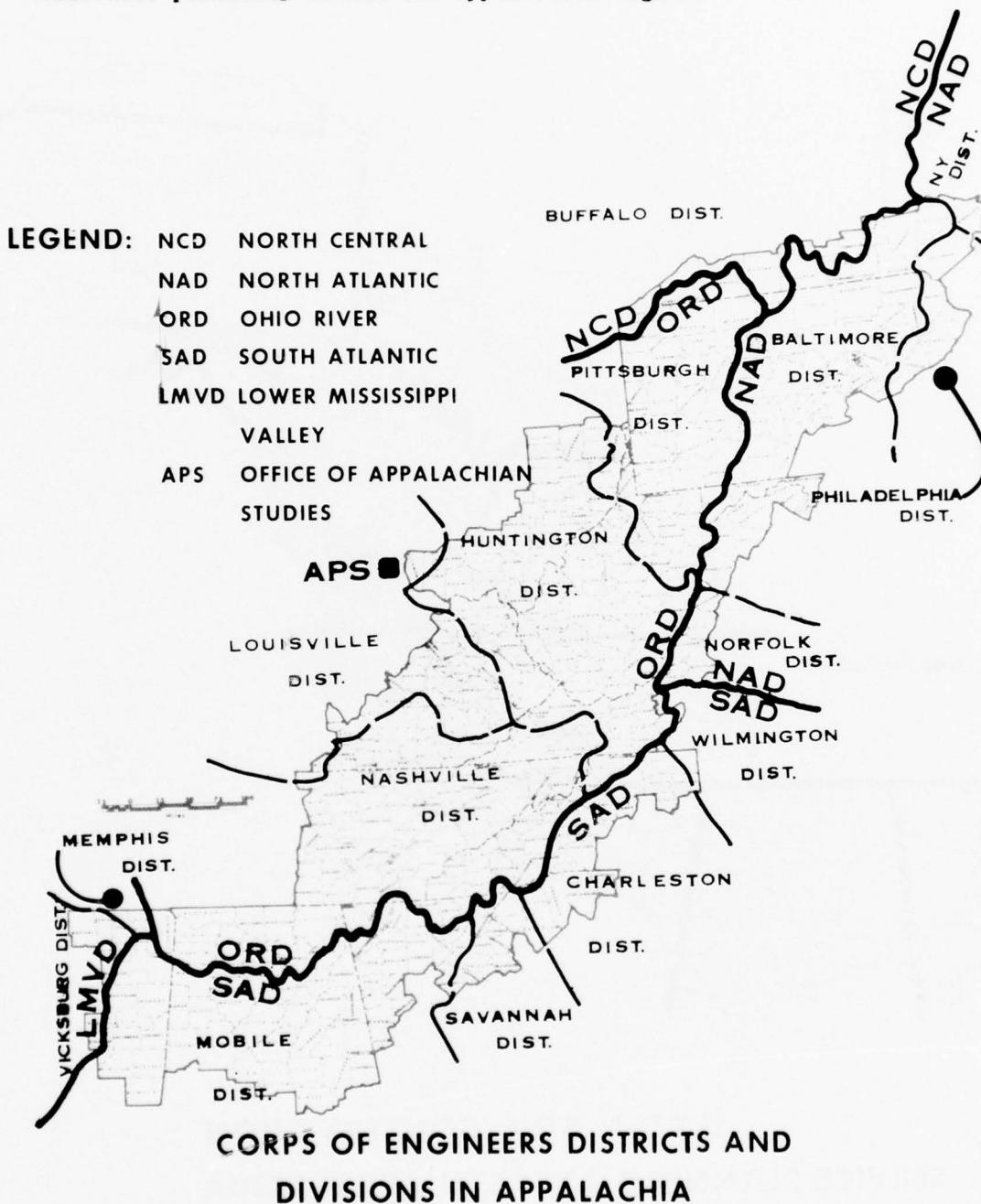


**U.S.D.A. SOIL CONSERVATION
SERVICE PLANNING AREAS IN APPALACHIA**

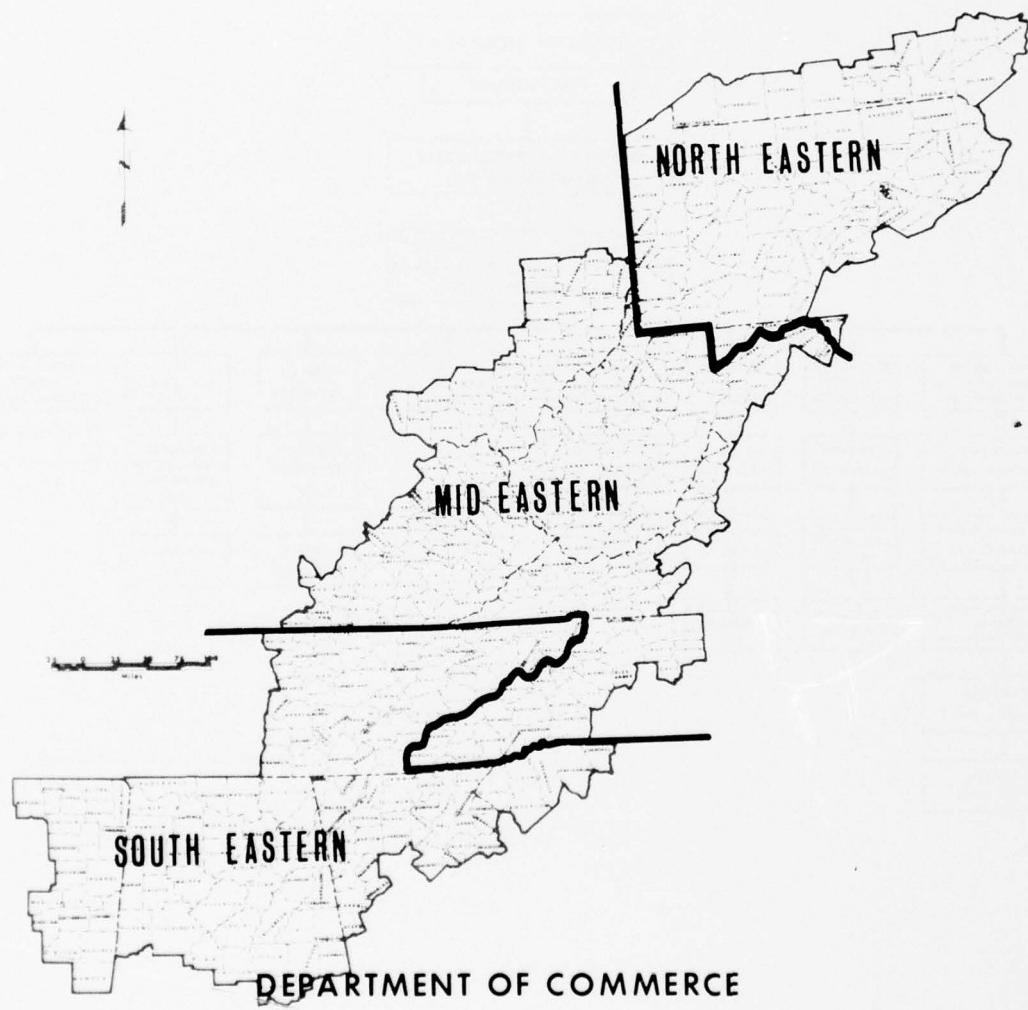
VI-2-5

FIGURE 2-4

CORPS OF ENGINEERS - Eleven of 15 Corps District Offices with areas in Appalachia, working with the Office of Appalachian Studies, provided the principal coordination for this report as well as preparing major portions of Parts II and III. Figure 2-5 shows Corps Divisions and Districts partially within the Appalachian Region.



DEPARTMENT OF COMMERCE - Commerce agencies cooperating in the study included: Bureau of the Census, Business and Defense Services Administration, Office of Regional Economic Development of the Office of Business Economics, Environmental Sciences Services Administration, Bureau of Public Roads (now in Department of Transportation) and Economic Development Administration. (EDA area boundaries are shown in Figure 2-6).



DEPARTMENT OF THE INTERIOR - The Department of the Interior, through the indicated agencies, (Figure 2-7), contributed to this report. Four of the nine appendixes to this report: D (Water Supply and Water Pollution Control), G (Fish and Wildlife Resources), H (Ground Water) and I (Mineral Industry Resources and Water Requirements) were the responsibility of the Department. Two others; C (The Incidence and Formation of Mine Drainage Pollution) and F (Recreation and Aesthetics) have major portions prepared by Departmental Agencies and another, B (Power Supply and Requirements) had some input from SEPA.

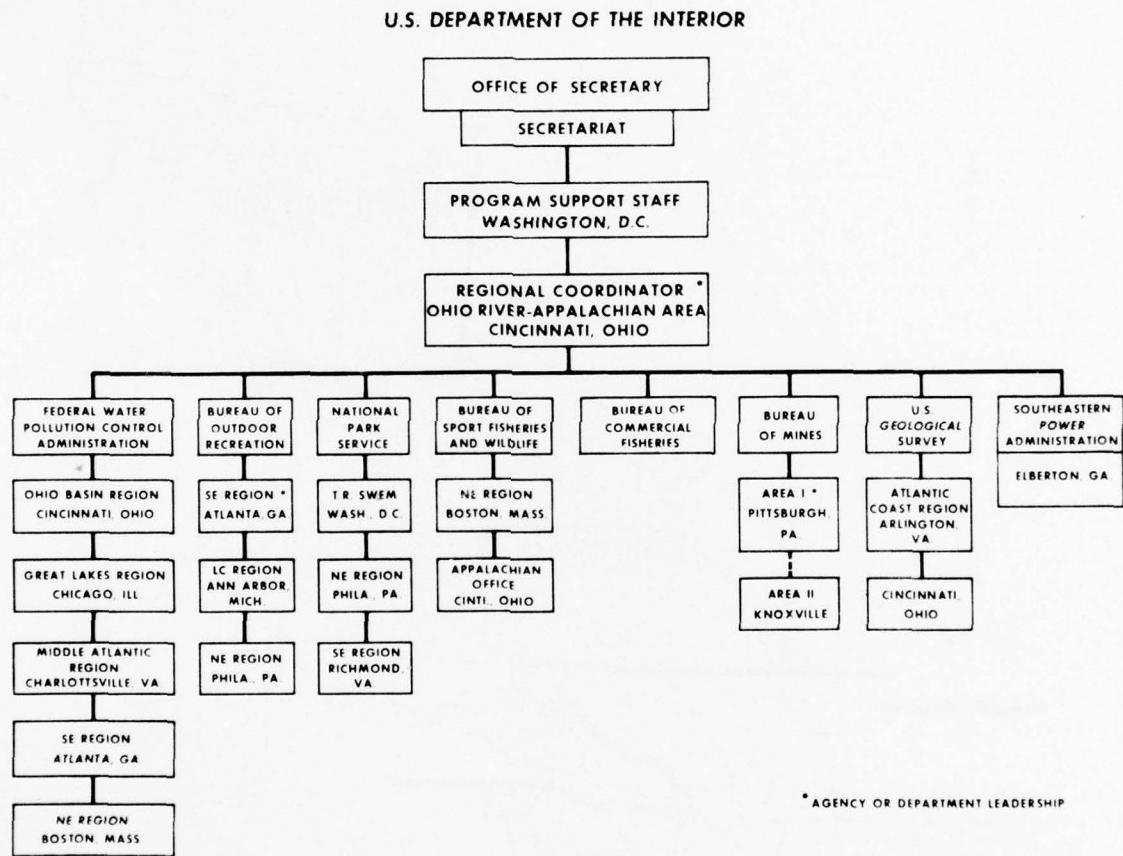
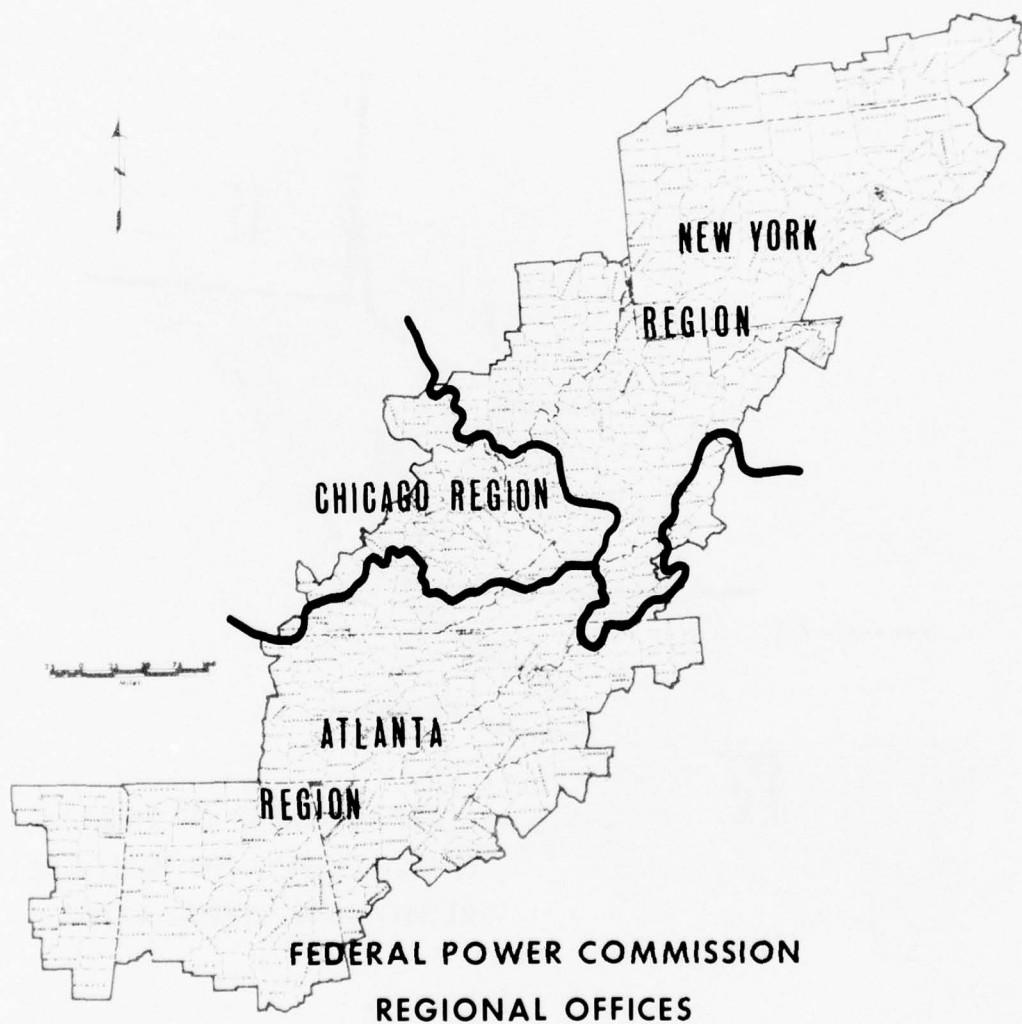
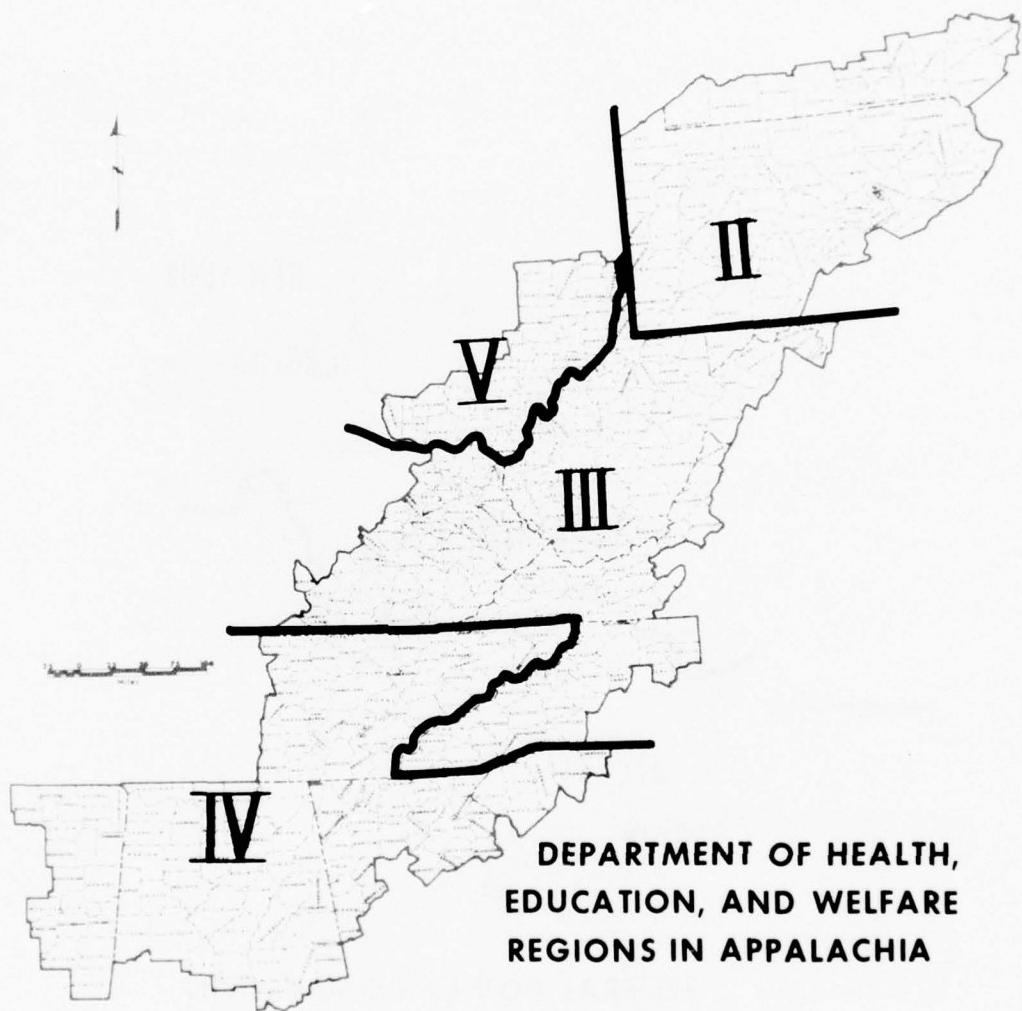


FIGURE 2-7

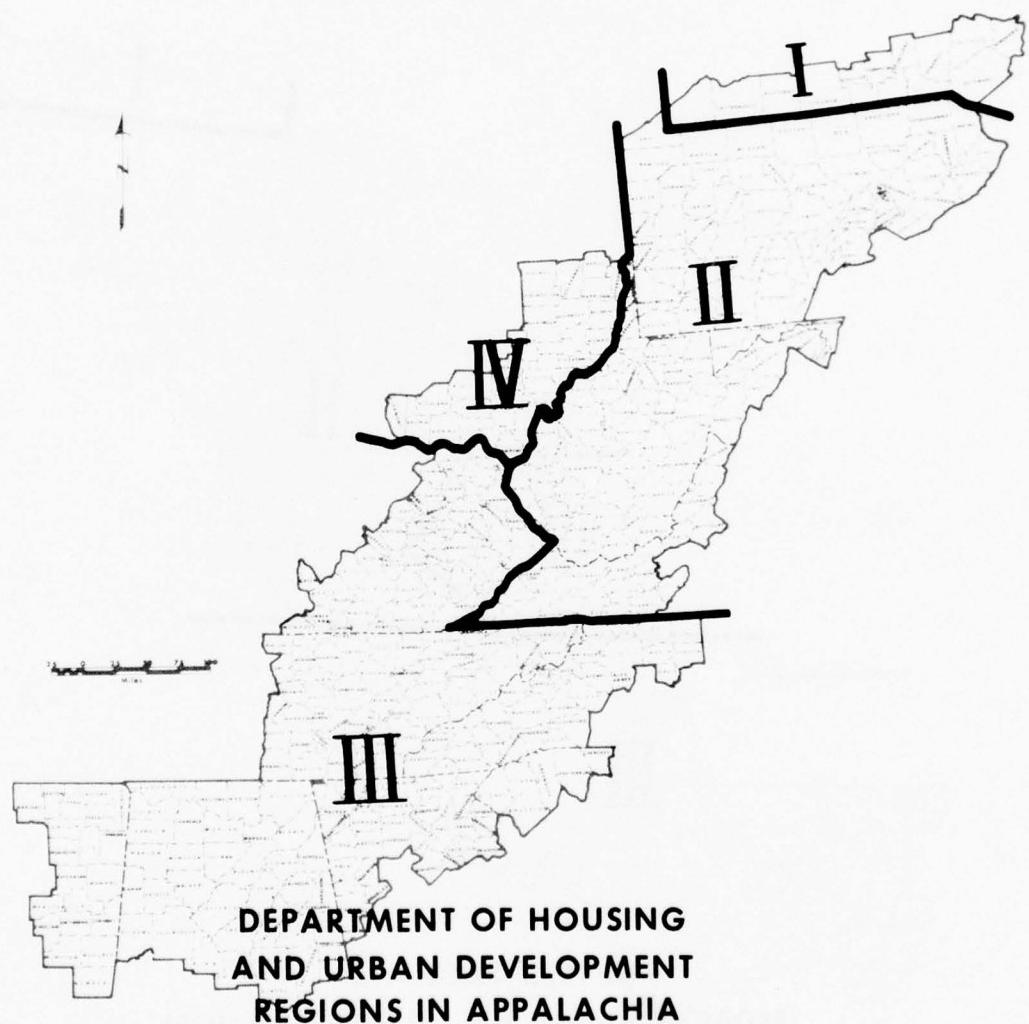
FEDERAL POWER COMMISSION - The FPC contribution to this report is contained in Appendix B which the Commission prepared. Figure 2-8 shows the FPC Regions involved. The Atlanta Region was designated as the office for coordinating the Commission's studies.



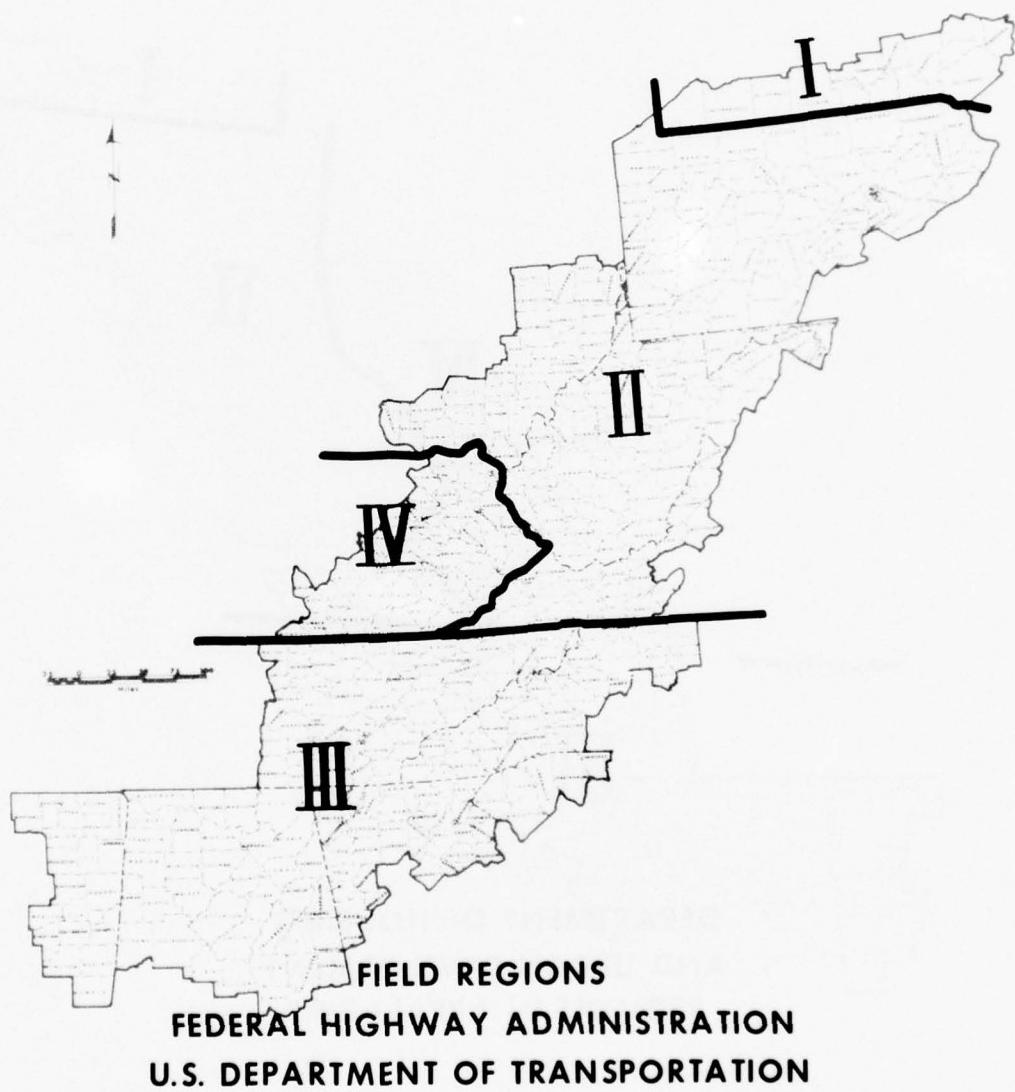
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE - HEW supported several agencies with data collected through the regions represented below. The U. S. Public Health Service prepared a supplement on "Health Aspects" for inclusion in Appendix D. Prior to transfer of the Federal Water Pollution Control Administration to the Department of Interior, this Department **INITIATED** water supply and water quality studies. Figure 2-9 shows the Department of Health, Education and Welfare Regions in Appalachia.



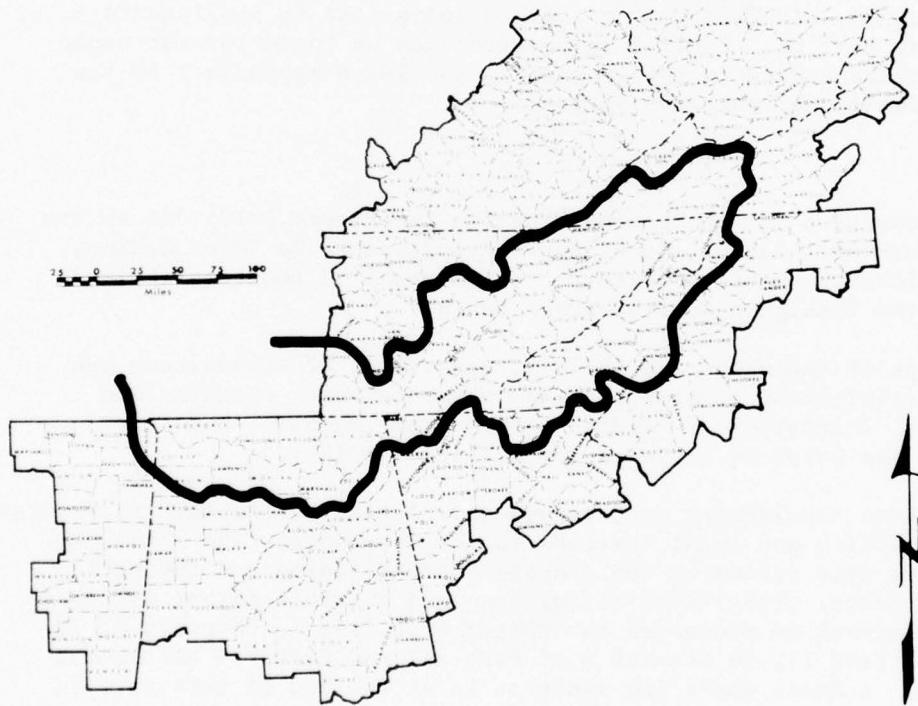
DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT - HUD, although not a member of WDCCA, had a supporting role in the Appalachian Water Resource Study. The Regional Offices were active in Appalachian Regional planning. Figure 2-10 shows the Department's Regions in Appalachia.



DEPARTMENT OF TRANSPORTATION - The Department's principal contribution to the Appalachian Water Resource Study was through the Federal Highway Administration. Contributions from Regional offices to the Study were made through the Water Resource Coordinator in the Department's Washington, D.C. office. The Federal Highway Administration was moved from the Department of Commerce in February, 1967 to the Department of Transportation. Figure 2-11 shows Field Regions of the Federal Highway Administration in Appalachia.



TENNESSEE VALLEY AUTHORITY - The development of the Tennessee River System is the primary responsibility of the Tennessee Valley Authority under the TVA Act of 1933. The 1936 report to the Congress on the unified development of the Tennessee River System set forth two important concepts: (1) "The planning of the river's future is entrusted to the TVA," and (2) "The planning of the Valley's future must be the democratic labor of many agencies and individuals, and final success is as much a matter of general initiative as of general consent." Since its inception, TVA has been responsible for the development of the basin's water resources in terms of flood control, navigation, and electric power. At the same time TVA has been committed to unified resource development. This commitment has required cooperative efforts with other agencies in such fields as recreation, fish and wildlife, agriculture, forestry, health, pollution control, education, community and regional planning, and industrial development. As a result of its historical development, TVA's participation in the Appalachian program required no radical departures from its traditional role in the Tennessee Valley. The Authority prepared a Sub-Regional Report (Part III) for this report. Figure 2-12 shows the TVA area in Appalachia.



TENNESSEE RIVER BASIN IN APPALACHIA

3. PARTICIPATING STATES

Appalachia, defined in PL 89-4 and PL 90-103, includes parts of 12 states and all of West Virginia. (See Figure 1-1). Within these states, in Appalachia, are more than 18 million people, living in 397 counties.

The cooperating state offices include the Governors of each state and designated persons to represent them in developing the Appalachian Water Resources Plan. In addition, there are governments in each county; 320 Soil and Water Conservation Districts; hundreds of local improvement groups, such as water districts, conservancy districts and drainage districts; and the 60-odd Local Development Districts working with the Appalachian Regional Commission.

The following summary discussions are referenced to more detailed parts of the report. Summaries of the early action elements of the plan are presented as State Summaries in Chapter 6 of Part I. Resources within each state along with projected resource needs are discussed in the ten Water Sub-region Reports in Part II. Project analyses and details are included in Part III, and in the various appendices. State Supplements to the report, which present independent state plans and programs are in Part V. State Water Laws, Programs and Organizational Patterns for Alabama, Georgia, Mississippi and South Carolina are in Supplements A, B, C, D, to this Part VI. Similar information can be found for the other nine Appalachian States in the previously published Appendix J to the Ohio River Basin Comprehensive Survey.

ALABAMA

The 35 counties in Appalachian Alabama (See Figure 2-13) lie in the Tombigbee-Warrior, Alabama, Tennessee and Appalachicola River Basins. Lamar and Pickens Counties, added to the original 33 counties in 1967, lie within the Tombigbee-Warrior River Basin.

The Corps of Engineers and the U.S. Department of Agriculture are actively participating in comprehensive water resource planning and development. Initiation of construction on the Tennessee-Tombigbee Waterway by the Corps is budgeted for Fiscal Year 1971.

The Alabama Appalachian program was coordinated by the Alabama Program Development Office and legal advisers to the Governors. The water related studies were guided by the Alabama State Planning and Industrial Development Board. The status of existing and possible future water resource development is presented in Chapter 6 of Part I, Chapters 9, 10, 19 and 20 of Part II, in Chapter 9 of Part III and Part V - all in the Main Report. A State water law synopsis is at the end of this part in Supplement A.

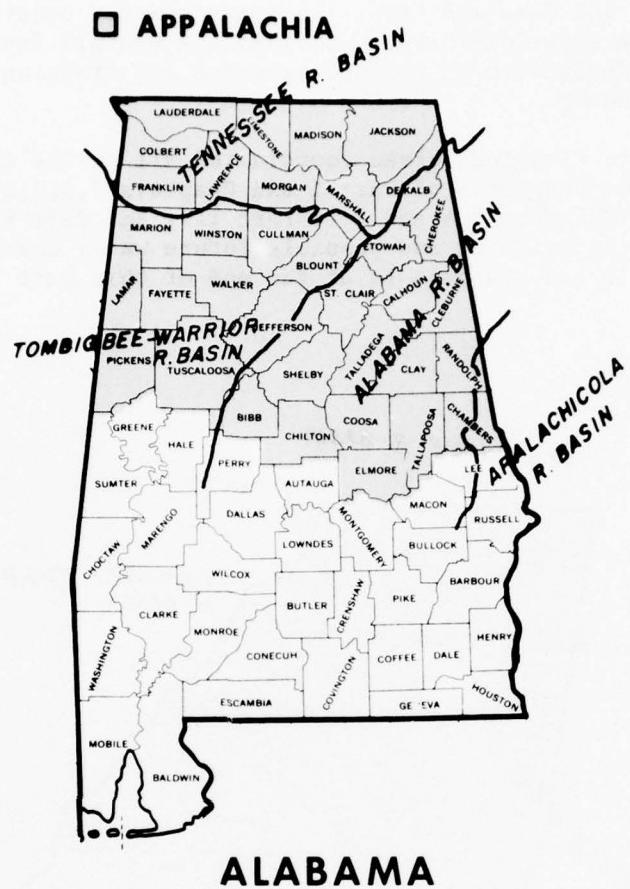


FIGURE 2-13

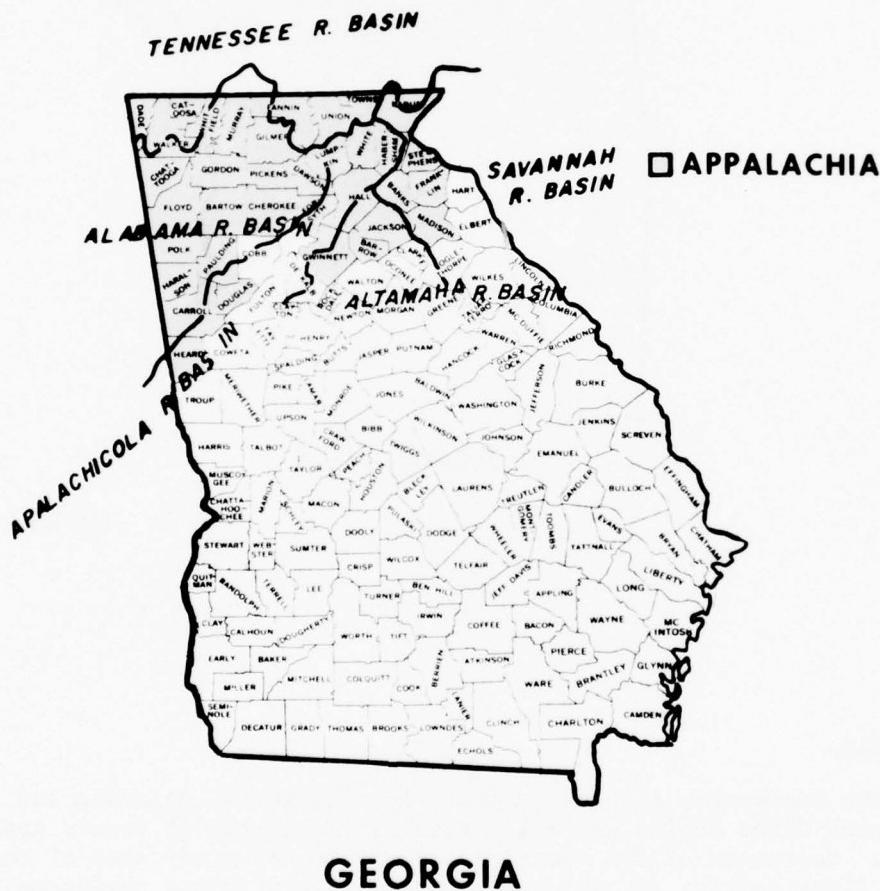
GEORGIA

The Tennessee, Alabama (Coosa), Appalachicola, Altamaha and Savannah River Basins are all partially within the 35 county Appalachian area. Seventeen of the counties are within the study area of the Southeast River Basins, for which a comprehensive plan was completed in 1963 (by a U.S. Study Commission).

The Corps of Engineers, U.S. Department of Agriculture, and the Tennessee Valley Authority are active in water resource development.

State agencies active in the water resource field are: Department of State Parks and Game and Fish, the Georgia Water Control Board and the Georgia Waterways Commission. In 1965 the Georgia Institute of Technology was designated to conduct research and training through its Water Resources Center.

The State Planning Bureau coordinated all of the Appalachian Program. See Chapter 6 of Part I and Chapters 7,8,9,10, 19 and 20 of Part II, Chapters 7,8 and 9 of Part III, and Part V for detailed information on existing and possible future water resources development. A State water law synopsis is at the end of this part in Supplement B.

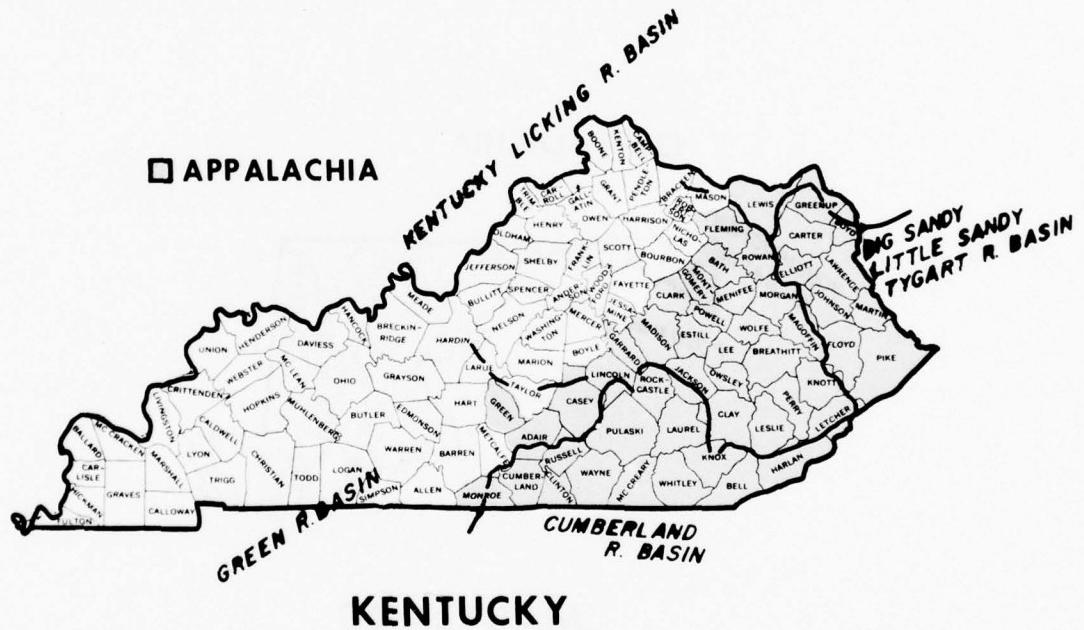


KENTUCKY

The 49 Appalachian Counties of Kentucky (See Figure 2-15) contain parts of the Green, Cumberland, Kentucky, Licking, Big Sandy, Little Sandy and Tygart Basins. All of these streams are tributary to the Ohio River.

The Corps of Engineers, U.S. Department of Agriculture and U.S. Geologic Survey (Department of Interior) have major water resource developments or studies in Kentucky. The Kentucky Division of Water of the Department of Natural Resources, Kentucky Geological Survey and University of Kentucky are active in water resources planning or development.

The Kentucky Appalachian Program was administered through the Kentucky Program Development Office in the Office of the Governor. The water resource program was coordinated by the Department of Natural Resources through the Division of Water. Chapter 6, Part I and Chapters 13, 14, 15, 16, 17 and 18 of Part II, Chapters 1, 13 and 16 of Part III and Part V of this report describe the existing and possible future water and related resource development of the state.



MARYLAND

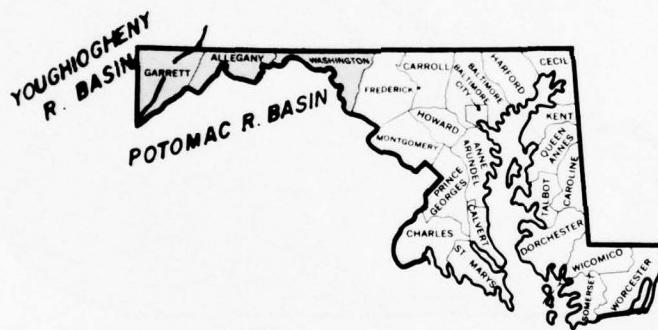
Appalachian Maryland (Figure 2-16) is three counties: Allegheny, Garrett and Washington. The area lies in the Youghiogheny (Ohio) and Potomac River Basins.

Intensive water resource developments are in place and planned by the U.S. Department of Agriculture and Corps of Engineers. The National Park Service manages 770 acres.

The Maryland Department of Forests and Parks, the Department of Game and Inland Fish, the Department of Water Resources and State Planning Department are active in the water resource management. Economic consultants and Department of Economic Development represented the state in the overall program; the water and related resource studies were supported by the Department of Water Resources and State Planning Department.

Detailed water resource information is presented in Part I (Chapter 6), Part II (Chapters 3, 4, 11 and 12) and in Part V of this report.

□ APPALACHIA

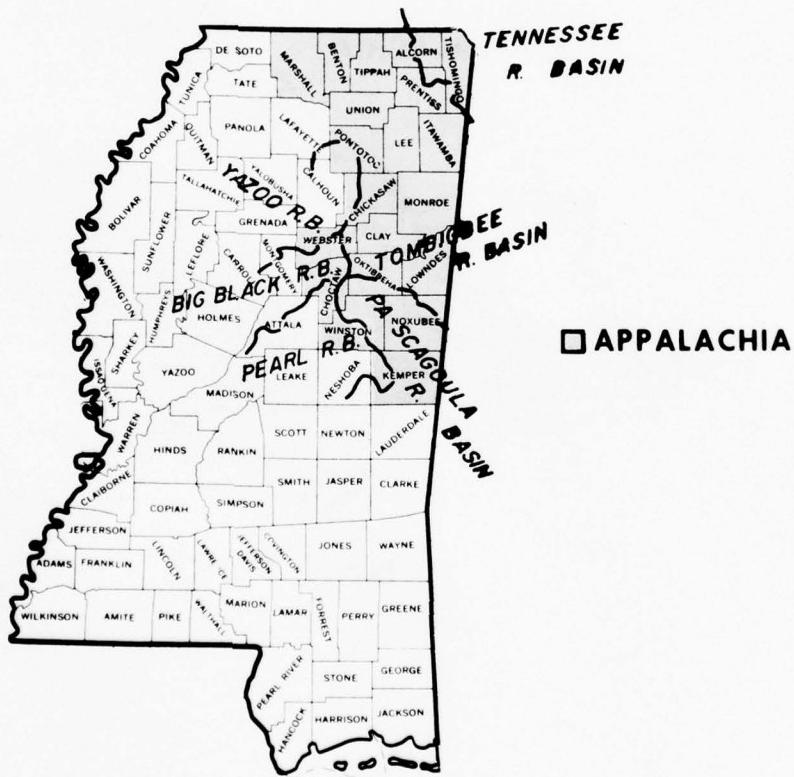


MARYLAND

MISSISSIPPI

Twenty counties of Mississippi (Figure 2-17) were added to Appalachia in 1967. About two-thirds of the area is in the Tombigbee River Basin. The remainder is in the Tennessee, Yazoo, Big Black, Pearl and Pascagoula River Basins. Comprehensive River Basin Surveys (Type II) have been completed for the Pearl, Big Black and Pascagoula. Projects have been planned and installed by the Corps of Engineers and Department of Agriculture.

State Appalachian programs were managed by the Federal-State Coordinator, Appalachian Development Office and Executive Secretary of the Tombigbee River Valley Water Management District. The water resource studies were supported by the same group plus representatives of the Tennessee-Tombigbee Waterway Development Authority and Bear Creek Watershed Association. Chapter 6 of Part I, Chapters 9 and 10 of Part II, Chapter 18 (Part III) and Part V of this report describe the existing and possible future water and related resource development in the State. A State water law synopsis is at the end of this Part in Supplement C.



MISSISSIPPI

NEW YORK

Thirteen southern-tier counties in New York (Figure 2-18) are in Appalachia. A fourteenth County, Schoharie, was added in 1967. The entire area has been studied by Federal-State or State resource planning groups. Comprehensive studies are substantially complete in the Ohio (Type I), Genesee (Type II) and Susquehanna (Type II) Basins. A report on the Delaware Basin was completed in 1962, and that area is now managed by the Delaware River Basin Commission, formed by an interstate compact. The New York Water Resource Commission represented the State in the studies for this report. Overall coordination was accomplished through the State Office of Planning Coordination. Chapter 6 of Part I, Chapters 3, 4, 11 and 12 of Part II, Chapter 10 (Part III) and Part V of this report describe the existing and possible future water and related resource development in the State.



NORTH CAROLINA

The Appalachian Region includes 29 North Carolina counties (Figure 2-19) within the Tennessee, Kanawha (Ohio R.), Yadkin-Peegee, Santee and Roanoke River Basins draining the area. The area has a long history as a resort center in the western part and emerging industrial development in the eastern part of the state.

Water resource developments have been planned and installed by the Corps of Engineers, U.S. Department of Agriculture, and the Tennessee Valley Authority. State agencies in the field are: Wildlife Resources Commission and the Department of Water and Air Resources. The Duke Power Company has constructed extensive private developments.

The total Appalachian Program was managed by the Department of Administration; the water and related resource studies were coordinated by the State Planning Task Force and the Division of Water and Air Resources.

Detailed water resource information is presented in Part I (Chapter 6), Part II (Chapters 7, 8, 19 and 20), and Part V of this report.



NORTH CAROLINA

OHIO

The 28 county Ohio Appalachian Region (Figure 2-20) lies entirely within the Ohio River Basin. In 1965 the Department of Natural Resources was designated to administer a 6-year \$100 million program of water and recreation developments. The Corps of Engineers and U.S. Departments of Agriculture and Interior are active in planning and installing water resource projects and management programs.

The Ohio Appalachian Program has been coordinated by the Department of Urban Affairs (Office of Appalachia); the water and related resource study has been coordinated by the Department of Natural Resources.

Ohio resource information is presented in Parts I, (Chapter 6), Part II (Chapters 11, 12, 13, 14, 15 and 16), Part III (Chapters 14 and 15) and Part V of this report.

APPALCHIA



OHIO

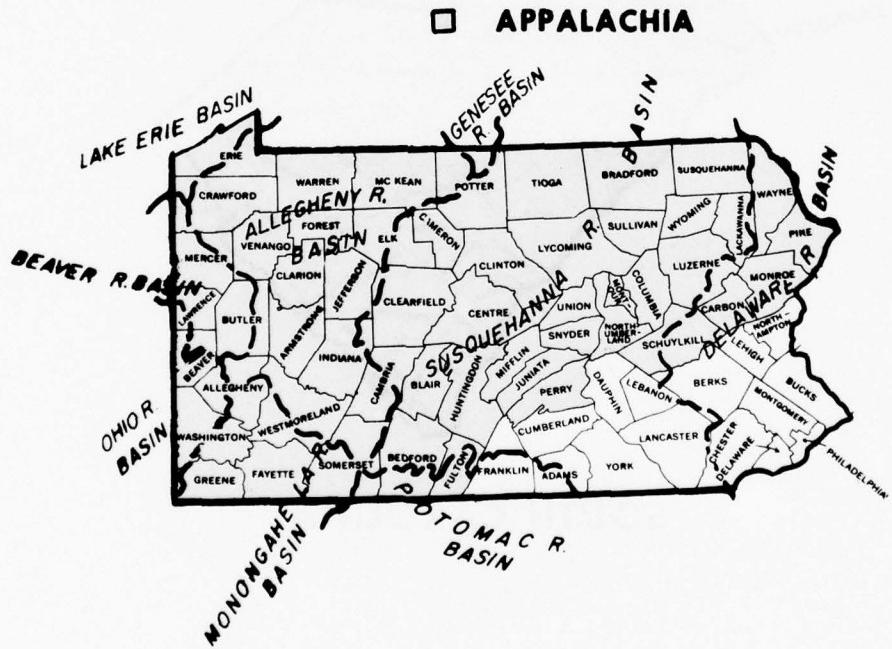
FIGURE 2-20

PENNSYLVANIA

Pennsylvania has the largest state area in Appalachia. Its 52 counties (Figure 2-21) lie in the Ohio, Potomac, Susquehanna, Genesee and Delaware River Basins and the Lake Erie drainage. The principal rivers in the Ohio River Basin are the Monongahela and Allegheny. Overall studies (Type I) have completed for the Ohio Basin; more detailed (Type II) studies are being made in the Susquehanna and Genesee Basins; other detailed studies have been made in the Potomac and Delaware Basins. The Corps of Engineers and U.S. Department of Agriculture have built many water resource projects. Management programs have been set up with those agencies and the U.S. Department of Interior cooperating with the Pennsylvania Sanitary Water Board, State Game Commission and Department of Forests and Waters and by state and local agencies alone.

Coordination of this study was accomplished through the Pennsylvania Department of Forests and Waters and Department of Commerce. The Pennsylvania Appalachian Program was directed by the Department of Commerce.

Pennsylvania's water and related resources development is presented in Part I (Chapter 6), Part II (Chapters 1, 2, 3, 4, 11 and 12), Part III (Chapters 2, 11, 19 and 20), and Part V of this report.



PENNSYLVANIA

SOUTH CAROLINA

The six counties of Appalachian South Carolina (Figure 2-22) are in the Santee and Savannah River Basins. Federal water resource agencies active in the area include the construction agencies of the Department of Agriculture and Corps of Engineers and the management and analysis agencies of USDA and U. S. Department of Interior. The Duke Power Company, currently constructing the Keowee-Toxaway Project, is also playing a significant role in the development of the water resources of the state. State agencies in the water resources field include the Water Resources Committee and Soil and Water Conservation Committee (which coordinated this study) and the Pollution Control Authority. The South Carolina Appalachian Program was coordinated by Executive Assistants to the Governor and the Regional Planning and Development Commission.

Water and related resources in South Carolina are discussed in Part I (Chapter 6), Part II (Chapters 7 and 8), Part III (Chapter 5) and Part V of this report. A state water law synopsis is at the end of this Part in Supplement D.

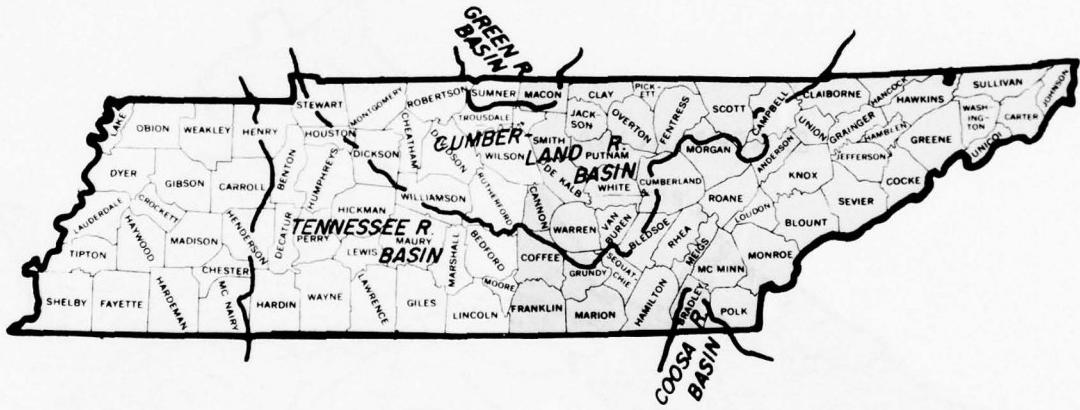


TENNESSEE

Parts of the Cumberland, Green, Coosa and Tennessee River Basins are included in the 49 Appalachian Tennessee Counties (Figure 2-23) (Cannon County was added in 1967). The Cumberland, Green and Tennessee Rivers are tributary to the Ohio River. The Tennessee Valley Authority has had responsibility for development of the Tennessee Basin resources since 1933. The Corps of Engineers is active in the adjacent river basins. U. S. Department of Agriculture water resources agencies have extensive locally or Federally sponsored developments and management programs. U. S. Department of Interior study agencies participate in water resource management. The State Planning Division and the Department of Conservation coordinated this water resource study. The Tennessee Game and Fish Commission and Division of State Parks also participated.

Details of and plans for Tennessee's water and related resources are contained in this Report in Parts I, II (Chapters 17, 18, 19 and 20), and V. Special subject data are in the Appendices.

APPALACHIA



TENNESSEE

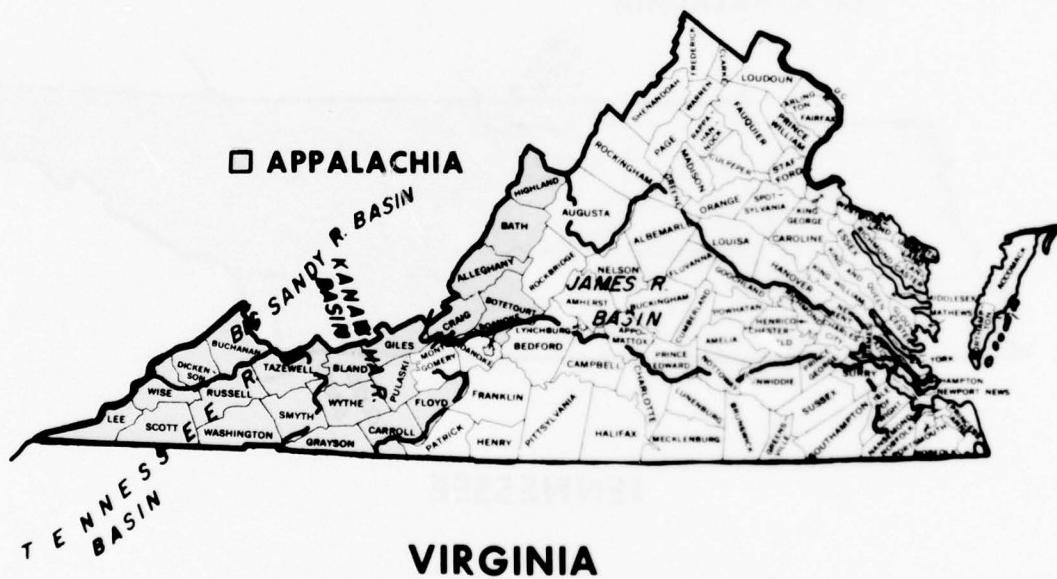
FIGURE 2-23

VIRGINIA

The Appalachian Region contains 21 Virginia counties (Figure 2-24) within the James, Kanawha (Ohio River), Big Sandy (Ohio River) and Tennessee River Basins. There are water resource programs and projects of the Tennessee Valley Authority, Corps of Engineers, U. S. Department of Interior and U. S. Department of Agriculture in the area. The Virginia Department of Conservation and Economic Development through its Division of Water Resources has developed plans for the utilization and management of water resources in the Kanawha, Tennessee and Big Sandy River Basins. A Federally directed study will be completed of the James River Basin in 1972. The Appalachian Power Company has extensive developments in this part of the state.

The Virginia Department of Conservation and Economic Development coordinated all Appalachian Programs; the Divisions of Water Resources, Planning and State Planning and Community Affairs were most active in the water resources study.

Virginia's resources are discussed further in Report Parts I, (Chapter 6), Part II (Chapters 5, 6, 13, 14, 19 and 20), Part III (Chapters 4 and 13) and Part V of this report.

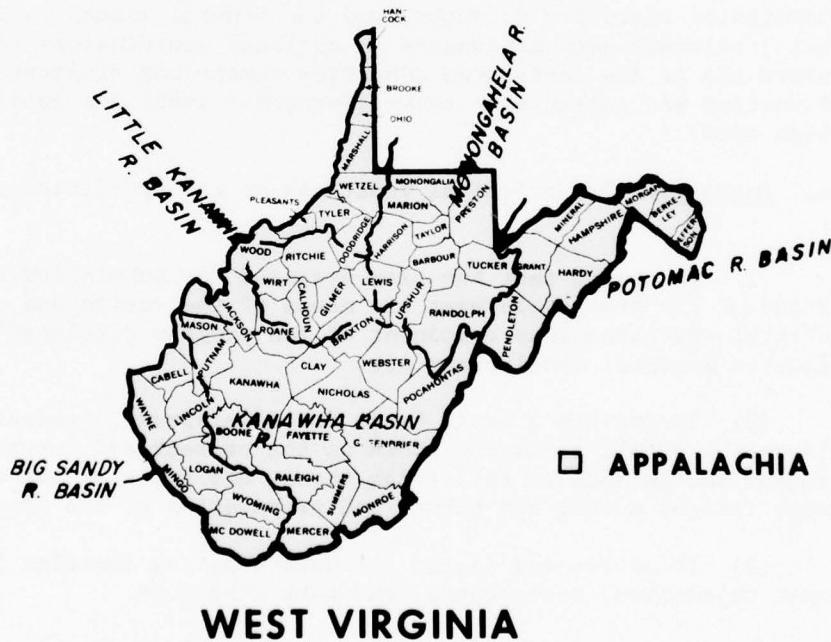


WEST VIRGINIA

All of West Virginia (Figure 2-25) is in the Appalachian Region. Parts of the Ohio River System (in the Kanawha, Big Sandy and Monongahela River Basins), all of the Little Kanawha River Basin and some small direct Ohio River tributaries are in the Region. The eight northeastern pan-handle counties are in the Potomac River Basin.

The Potomac River Basin Comprehensive Study was completed in 1962. A comprehensive study (Type I) of the Ohio River Basin was completed in the field in September 1969. A more intensive study (Type II) is underway in the Kanawha Basin; similar studies are programmed for the other river basins. Federal agencies active in water and related resource studies are: Corps of Engineers, USDA's Soil Conservation Service and Forest Service and Department of Interior agencies. The West Virginia Departments of Commerce and Natural Resources have been active in the Appalachian Programs. The Governor has maintained direct liaison with the Appalachian Regional Commission through his special Assistant.

See Parts I, (Chapter 6), II (Chapters 3, 4, 11, 12, 13 and 14), Part III (Chapters 3 and 13), and Part V (State Supplements) for detailed resource information and utilization plans.



4. APPALACHIAN REGIONAL COMMISSION

The Appalachian Regional Commission (ARC) is composed of the Governor of each of the thirteen States (with the addition of Mississippi in 1967) and a Federal Cochairman. One of the Governors is elected Cochairman each half year. The Federal Cochairman is appointed by the President. Each of the members has an alternate or voting representative. The State members (Governors) early established the job of State's Regional Representative to work on an equal, full-time basis with the Federal Cochairman at Commission headquarters, forming an Executive Committee of two voting members, with the Executive Director as a non-voting consultant. The Organization of the Commission staff is shown in Figure 2-26.

5. THE WATER DEVELOPMENT COORDINATING COMMITTEE FOR APPALACHIA

Under Section 206 of the Appalachian Regional Development Act of 1965 (PL 89-4), the Secretary of the Army was charged with the conduct of a comprehensive survey and development of a plan for the efficient utilization of the water and related resources of Appalachia. The Secretary directed the foundation of a Coordinating Committee as the principal vehicle for the consultations directed in Section 206(c) of the Act (see page VI-1-3), and designated the Director of the Office of Appalachian Studies as Chairman of the Water Development Coordinating Committee for Appalachia.

The Chairman wrote the Governors of the 13 States and Commonwealths, the Commission executive director, and the Federal agency representatives who had previously been designated as national coordinators to select or inform him of the designated committee member and alternate. The first meeting was called soon after (September 1965) all appointments had been made.

a. Purposes. The principal functions of the Coordinating Committee were:

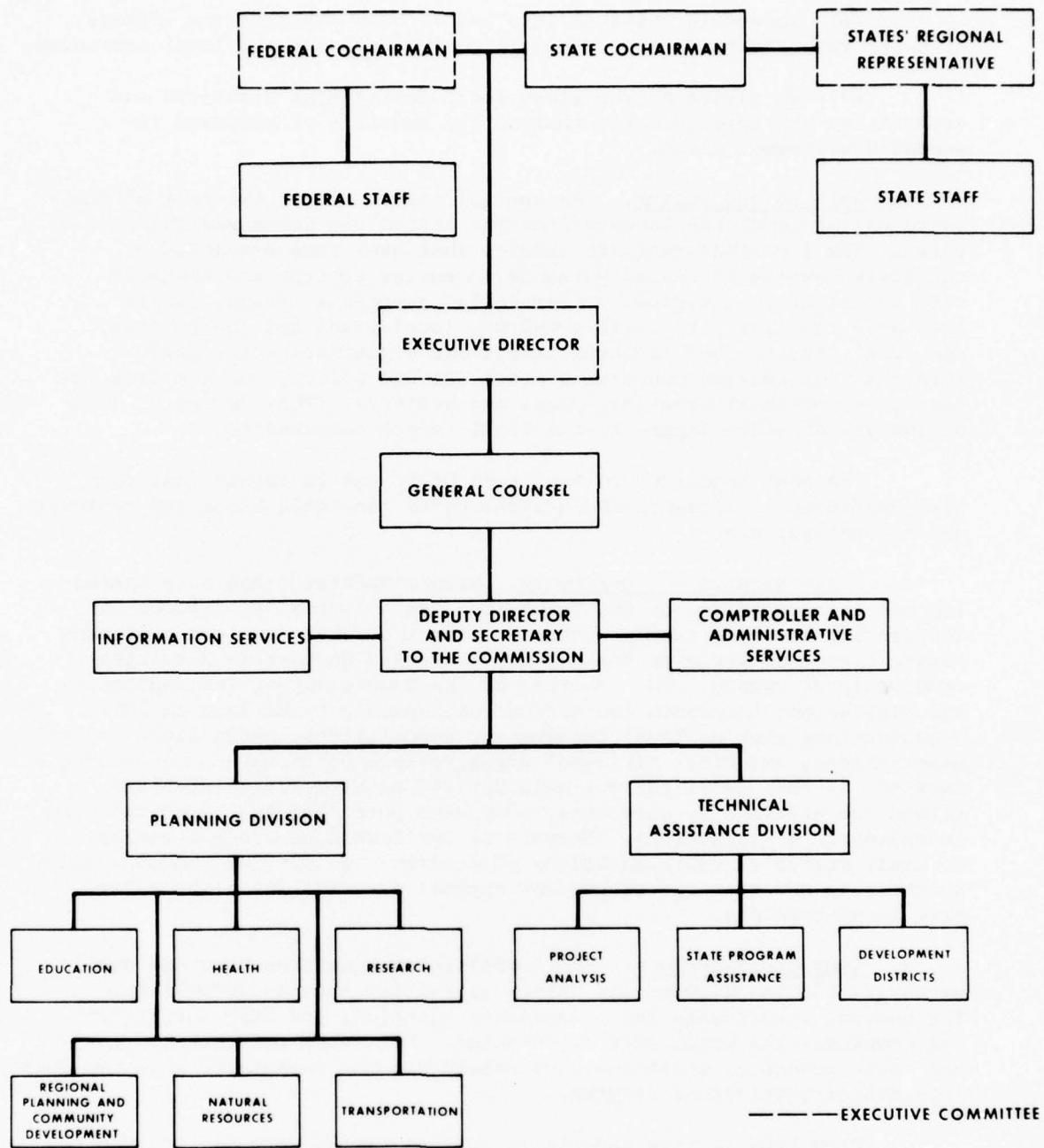
(1) To assure that the plan prepared for submission by the Secretary of the Army would meet the needs of the region and constitute an integral and harmonious component of the program developed under the Appalachian Regional Development Act.

(2) To provide a broad basis for development, presentation and consideration of all pertinent views on the present and future needs of the region and methods of satisfying these, and for full and continuing exchange thereof during the survey and preparation of the plan.

(3) To advise and assist all participating agencies in regard to basic objectives, assignments, and work schedules.

(4) To assist in the resolution of problems as they arose.

(5) To review periodically the progress of work.



APPALACHIAN REGIONAL COMMISSION

STAFF STRUCTURE

(6) To obtain insights into and to help evaluate the effects of water resource project investments on the regional and local economies.

(7) To advise on the steps local development districts and communities may take to fully realize the benefits of proposed resource development plans.

b. Role of the States. The special importance of the role of the Coordinating Committee members from the States and Commonwealths is clear. The important research results that have been assembled by the State members furnished guidance in making appropriate contacts with political subdivisions or particular geographic areas, (where they were familiar with local problems, local plans and aspirations, and local leaders, and planning groups and organizations). They furnished information concerning State law and policy, and for data regarding non-federal programs, plans and projects. They served as co-ordinators of state inputs to the final report components.

The most important role of each State was to insure that the plan developed is integral and harmonious to the total State and regional development pattern.

c. Staff Support and Observers. With committee membership including one representative of the Commission, each federal department and independent agency directly concerned with the survey and one representative from each State in the region, there was an initial Committee membership of twenty. The addition of the Department of Transportation and Mississippi increased the ultimate membership to 22 late in 1967. Organizations such as local improvement associations, basin flood control associations, and other citizens' organizations which have a continuing interest in the investigations were invited to have representatives attend the meetings as observers; they were permitted full participation in appropriate discussions. Members of the Committee brought members of their staffs or representatives of departmental or State bureaus and agencies to the meetings to present special material and also to take part in discussions.

d. Specific Functions. The Coordinating Committee provided the necessary liaison between the survey activities and the Commission, the federal departments and independent agencies, and with the States and Commonwealths which were represented. All water management needs and their potential solutions were considered and integrated with the full Appalachian development program.

From time to time experts in various fields were called upon to present technical reports and data, or information as to technological or policy changes which affected the study. Committee members determined what considerations were to be given to such information by the agencies which they represented, and distributed the information accordingly.

Each member informed other interested individuals of the state or the federal agency which he represented as to the activities and decisions of this Committee. He kept the Committee informed of changes in law, policy, regulations, or plans which affected the study or its conclusions.

The Committee settled issues that could be resolved at field level. The Committee members were called upon to assist in expediting portions of the study and to rescope inputs in order to maintain the study schedule. The State members were especially active in this area when they were asked to make a greater report contribution (State Supplement) in 1967. The Committee meetings served as a clearing house for the discussion of ideas and for coordinating the work of cooperating groups.

c. Voting by the Committee. Use of the Quaker method of conducting meetings was found to be effective and acceptable. After full discussion on any item, the chairman evaluated and announced the "sense of the meeting" for concurrence. In procedural or other matters where voting was required, Robert's Rules were followed.

6. OFFICE OF APPALACHIAN STUDIES ORGANIZATION

The Office of Appalachian Studies (APS) was opened in Cincinnati, Ohio, 3 May 1965. APS was under the supervision of the Ohio River Division, commanded by General W. P. Leber, Colonel John A. Graf, General Willard Roper, and by Colonel Lee, between 1965 and 1970. The staff expanded until 1967 when the workload reached its peak. In 1967, there were 27 regular employees and 12 temporary employees and graduate fellows. As many as 30 people, including staff members, and people "on loan" from Ohio River Division and Corps Districts worked during the summer of 1969 when the permanent staff had been reduced to about one-half strength.

The Office of Appalachian Studies was composed of an Executive Office, an Engineering Branch, an Economics Branch and an Administrative Branch. Figure 2-27 displays APS organization. Figure 2-28 lists major Corps of Engineer contributors to the Appalachian Report.

a. The Executive Office. The Director was Colonel John C. H. Lee, Jr., long experienced in military and civil administration and in resource planning. He was directly responsible for overall conduct of the study.

The Deputy Director, served as direct assistant to the Director, and had the responsibility of coordinating agreements with the other Corps offices; and personnel, office, and budget management. The Executive Officer position was established in 1966, when the officer who had acted as Deputy Director was transferred, without replacement.

b. The Engineering Branch. The mission of the Engineering Branch was coordination of the comprehensive engineering planning for water resource development in the Region. The responsibility included assisting the Corps Districts' Appalachian Planning Sections in developing their plans; making recommendations based on Appalachian needs and criteria; and reviewing the final plans. This Branch also had responsibility for coordinating preparation and printing of the report itself.

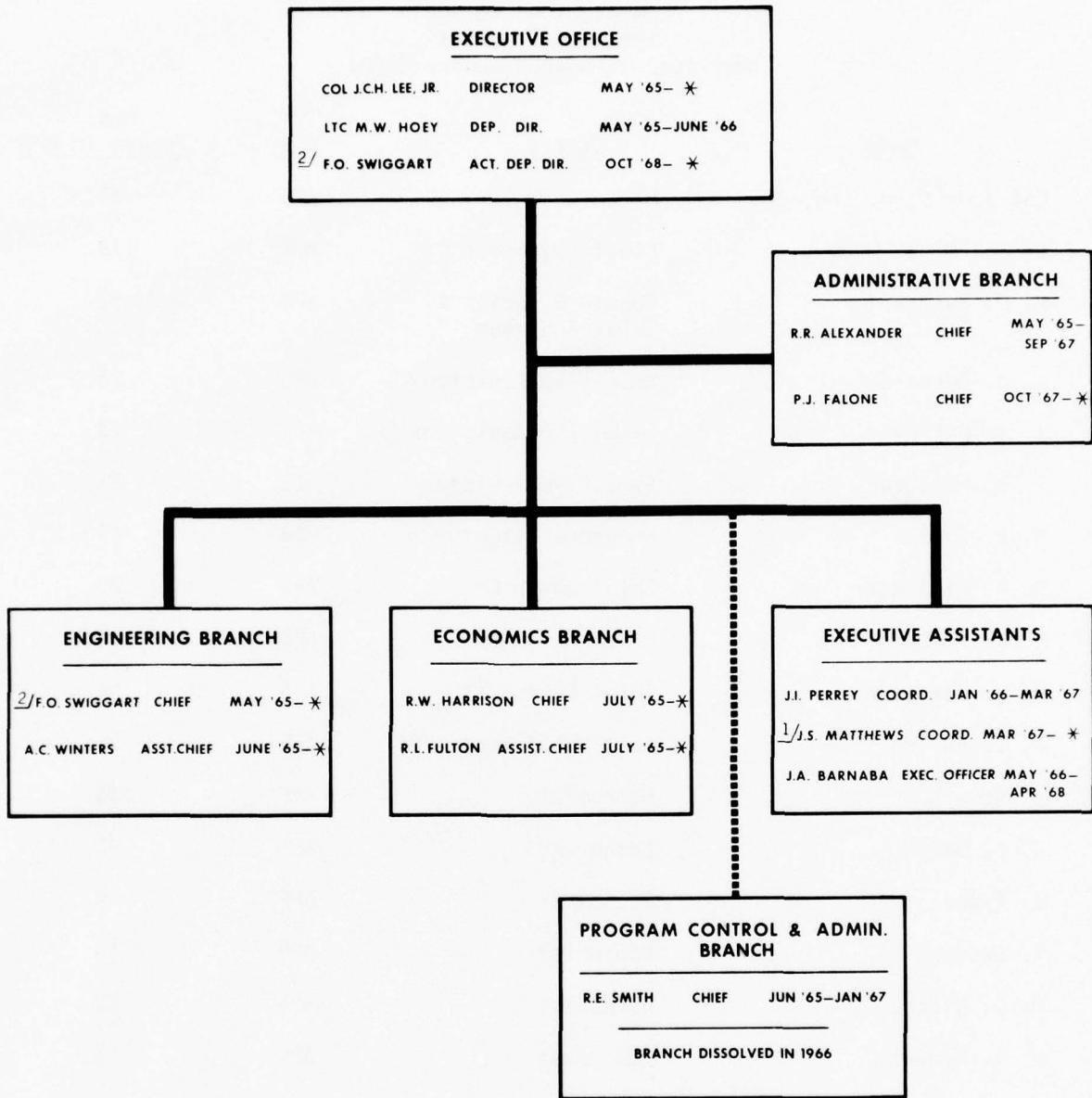
c. Economics Branch. The Economics Branch was responsible for developing the planning concepts described in Part IV as well as co-ordinating data for the Sub-regional Reports (Part II). This responsibility included briefing Corps Districts on procedures developed and coordinating analyses. The delineations between the Economics and Engineering Branches were not as clear cut as the preceding would indicate; a "team concept" was freely employed to solve most problems; this was particularly true during the Plan Formulation Stage of the study.

d. Administrative Branch Organization. The Administrative Branch provided direct support to the other three elements in personnel problems, by furnishing clerical help, managing the budget, preparing for WDCCA meetings, and so forth.

7. FEDERAL DEVELOPMENT COMMITTEE FOR APPALACHIA

By Executive Order, President Johnson established the Federal Development Committee for Appalachia as prescribed by Section 104 of the Act. It was chaired by the Federal Cochairman of ARC and included representatives of the Secretaries of Agriculture; Commerce; Defense; Health, Education, and Welfare; Interior, as well as the Office of Economic Opportunity (OEO), Federal Aviation Agency, Housing and Home Finance Agency (HHFA), and Tennessee Valley Authority. The Committee had the task of harmonizing Federal activities into a common effort for the development of Appalachia.

The Presidential Executive Order 11386 of 29 December 1967 replaced the Federal Development Committee for Appalachia (Executive Order 11209 of March 25, 1965) with the Federal Advisory Council on Regional Economic Development composed of the Secretary of Commerce as Chairman; the Secretaries of Agriculture; Army; Health, Education, and Welfare; Housing and Urban Development; Interior; Labor; and Transportation; the Director of the Office of Economic Opportunity; the Administrator of the Small Business Administration; the Federal Cochairman of the Appalachian Regional Commission; the Federal Cochairmen appointed by the President under authority of Title V of the Public Works and Economic Development Act of 1965; and the Chairman of the Alaska Field Committee.



1/ Had a dual assignment as Executive Officer from April 1968.

2/ Dual assignment

* End of study November 1969

MAJOR CORPS OF ENGINEERS
CONTRIBUTORS TO THE
APPALACHIAN REPORT
(May 1965 through November 1969)

<u>Name</u>	<u>Title</u>	<u>PDS</u>	<u>Mos. Tenure in APS</u>
Col John C. H. Lee, Jr.	Director	APS	57
Lt Col M. W. Hoey	Deputy Director	APS	18
F. O. Swiggart	Deputy Director & Chief Engineer	APS	52
J. A. Barnaba	Executive Assistant	APS	23
J. I. Perrey	Executive Assistant	APS	13
J. S. Matthews	Executive Assistant	APS	31
R. E. Smith	Programs Director	APS	19
R. R. Alexander	Chief Admin Br	APS	29
P. J. Falone	Chief Admin Br	APS	27
R. W. Harrison	Chief Economist	APS	51
R. L. Fulton	Asst Chief Economist	APS	50
J. Auburg	Economist	APS	16
C. A. Berry	Economist	APS	42
J. Evans	Economist	APS	44
T. Ledford	Economist	APS	13
P. G. Vlachos	Economist	APS	22
M. T. Monson	Economist	APS	13

Legend

PDS	Permanent Duty Station
APS	Office of Appalachian Studies
ORD	Ohio River Division
ORDL	Ohio River Division Laboratories
ORP	Pittsburgh District
ORH	Huntington District

<u>Name</u>	<u>Title</u>	<u>PDS</u>	<u>Mos.</u> <u>Tenure in APS</u>
P. L. Halvorson	Geographer	APS	12
H. L. Bryant	Economist	APS	25
N. F. Edwards	Economist	APS	12
R. C. Turner	Economist	APS	12
P. Hancock	Economist	APS	3
A. C. Winters	Asst Chief Engineering	APS	52
C. R. Harbaugh	Civil Engineer	APS	52
W. T. Whitman	Civil Engineer & Report Writer	APS	39
W. C. Porter	Civil Engineer	APS	19
M. M. Bouknight	Civil Engineer	APS	20
J. Smith	Civil Engineer	APS	7
J. S. Clare, Jr.	Civil Engineer	APS	39
P. H. Struthers	Chemist	APS	22
D. L. Clawson	Recreation Specialist	APS	20
L. G. Antle	Project Formulator	APS	37
Captain Richard Migues	Military Assistant	ORDL	3
ILT Bernard J. Koczaja	Military Assistant	APS	7
<u>Personnel on Temporary Duty:</u>			
J. Pfiester	Mgmt Analysis Ofcr	ORD	8
R. M. Flowers	Computer Programmer	ORD	1
T. Kent	Economist	ORD	4
C. C. Mark	Civil Engineer	ORD	2
J. Parke	Economist	ORD	4
J. Hubbard	Mechanical Engineer	ORDL	2

<u>Name</u>	<u>Title</u>	<u>PDS</u>	<u>Mos.</u> <u>Tenure in APS</u>
H. Wise	Civil Engineer	ORP	2
J. Bates	Civil Engineer	ORH	2
J. Winterhalter	Visual Information Spec	ORD	5
M. Wilhoit		ORDL	

Secretaries

M. Mills	Secretary to the Director	APS	53
M. Defevers	Secretary to the Deputy Director	APS	11
J. Goldstone	Secretary to the Economics Branch	APS	46
R. Glassford	Secretary to the Director and Engineering Branch	APS	12
G. Lippold	Secretary to the Economics Branch	APS	39

Typists

D. Altman	W. Jackson
M. Bond	D. Middleton
S. Brand	L. Peveler
E. Breyley	A. Tarvin
K. Edes	J. Thomas
D. Elam	G. Turner
J. Fitzpatrick	E. Yelton
M. Holthaus	

Graphics Department

R. Burns	C. Hermann
K. Franks	L. Lustenberger
R. Gaines	M. Pagano
G. Garrett	

CHAPTER 3 - PLANNING HISTORY

1. CHRONOLOGICAL HISTORY

a. Fiscal Year 1963. The President's Appalachian Regional Commission (PARC) was formed on 9 April 1963, to recommend a comprehensive economic development program for the region, as requested by President John F. Kennedy, in direct response to the request of the Conference of Appalachian Governors.

b. Fiscal Year 1964. PARC reported to President Lyndon B. Johnson on the current economic condition of Appalachia and presented a broad program for the betterment of the people of the Appalachian Region. PARC cited their recommendations as only a beginning, and recommended that an Appalachian Regional Commission be established to carry out the program.

The PARC also recommended that the water resource programs of the Army Corps of Engineers, Geological Survey, Department of Agriculture and Tennessee Valley Authority be accelerated; and expanded to include construction of sewage and water facilities with increased loan-funds available through Housing & Home Finance Administration (now in HUD), Farmers Home Administration, Public Health Service, and the Area Redevelopment Administration (now EDA).

The final recommendations of the Administration and the Public Works Committees, as reflected in the Senate bill (S.2782), included a new Section 206. That section directed the Secretary of the Army, through consultation with appropriate Federal agencies, to conduct a survey of Appalachia's water resources. The survey was to consider and study every facet of water resource development, especially those aspects fostering economic growth.

c. Fiscal Year 1965. The Appalachian Regional Development Act was passed by the Senate and sent to the House in 1964. It was passed early in 1965 by the House of Representatives and signed by the President on 9 March. President Johnson appointed the first Federal Cochairman of ARC in April 1965; the Commission's first organizational meeting was held that month.

In anticipation of the Act, a general Plan of Survey for Appalachia was written by the Corps of Engineers (completed in August 1964).

Colonel John C. H. Lee, Jr. was selected to direct the Corps' Appalachian Planning Group (APG) in Washington, D.C.; and appropriate federal agencies appointed representatives to assist APG in preliminary work.

During the winter months of 1964-65 Colonel Lee was active in preliminary negotiations as to scopes of proposed work with the pertinent Federal departments and agencies. Agreements were reached on many aspects before the actual passage of the Act. Also, during this period, an inventory of existing water resource projects in the Region was completed.

The Act designated an Appalachian Region containing parts of 10 states and all of West Virginia, and provided for a study to determine whether part of New York State should be in the Region. The Office of Appalachian Studies opened on 3 May 1965 in Cincinnati, Ohio with Colonel Lee as Director, under direct supervision of General W. P. Leber, Division Engineer, Ohio River Division.

Work on the new, specific Plan of Survey began.

A contract was awarded to Cecil B. Haver and Associates of Chicago, Illinois for a study of "The Economic Analysis and Role of Water Resource Projects in Regional Development" for the Office of Appalachian Studies. This study was completed in August 1965.

The Office of Business Economics of the U.S. Department of Commerce was employed to delineate homogeneous economic sub-regions and to make economic projections for the Appalachian Region and contiguous counties.

The U.S. Department of Interior through the U.S. Geological Survey published a hydrologic atlas of the Appalachian Region.

By the end of June 1965, the permanent staff of APS consisted of: the Chief of the Engineering Branch, the Assistant and a secretary; the Chief of the Economics Branch and Assistant; and the Chief of the Administrative Branch and 3 staff members. The Executive Office consisted of the Director, Deputy Director, Administrative Assistant and two secretaries.

During May and June, the Director and Chief of the Engineering Branch met with planners from the North Atlantic, South Atlantic and Ohio River Divisions (of the Corps of Engineers) and with the Tennessee Valley Authority to explain the mission of APS.

d. Fiscal Year 1966. The Director of APS asked the federal representatives, originally appointed to assist the Appalachian Planning Group, for a listing of cooperating offices. The Federal agencies were also asked to appoint a member and alternate to a survey coordinating committee to be called "The Water Development Coordinating Committee for Appalachia" (WDCCA).

Thirteen counties of New York State were officially included in the Region in August by ARC resolution in consonance with the Act.

Governors of the nine States and three Commonwealths in the Region were asked to appoint a representative to the coordinating committee.

Mr. Fred Wampler, Ohio Basin Regional Coordinator for the Department of the Interior, was assigned responsibility for coordinating all that Department's studies in Appalachia. G. G. Wyrick opened a U.S. Geological Survey Appalachian Project Office in Cincinnati. The Bureau of Sport Fisheries and Wildlife Appalachian Program Office was established in Cincinnati, with Mr. Donald Reese in charge. The Appalachian Task Force Office for the Bureau of Outdoor Recreation was established in the Atlanta, Georgia, Regional Office with Harry H. Wilkerson as Task Force Leader. Responsibilities for other Interior agency studies were assigned to existing offices.

The State Conservationist, Soil Conservation Service, for West Virginia, Thomas B. Evans, was named U. S. Department of Agriculture Study Coordinator for Appalachia (followed by Robert E. Quilliam in June 1967). An Appalachian Water Resource Survey office was established in Morgantown, West Virginia, with Norris R. Caryl as Staff Leader.

Each of the 12 Governors selected a member, and usually an alternate, for his state or commonwealth on the WDCCA.

Each federal agency designated offices responsible for the study, in addition to the specially created offices already listed.

Each cooperating office was asked to prepare its work plan and schedule to be included in the Plan of Survey. Agency study budgets were prepared, negotiated, and tentatively approved by Colonel Lee.

The first meeting of the Water Development Coordinating Committee for Appalachia (WDCCA) was held in Asheville, North Carolina on 20-21 September 1965. The meeting was a water resource development status report and 'get acquainted' session. The meeting was the real beginning, or 'kickoff', of the coordinated study. Certain key work-budget decisions were made.

Each agency, state and federal, completed its proposed work assignments, work schedules, staffing requirements, and budget estimates.

The first draft of the Plan of Survey was distributed in January 1966; that edition announced the agreed-upon assignments and budgets.

All states began work on overall 'State Investment Plans' as requested by the Appalachian Regional Commission.

The second meeting of the WDCCA was held in Birmingham, Alabama, 24-25 February 1966. The meeting was held to approve the Plan of Survey.

The Soil Conservation Service of USDA, in consultation with state members of the WDCCA, located and identified 100 watersheds (in addition to its going program) to be studied under the Appalachian Water Resource Survey, using funds separately justified and appropriated to the Department of Agriculture.

The U.S. Geological Survey issued the circular, "Stream Quality in Appalachia as Related to Coal-Mine Drainage, 1965".

The Office of Business Economics delineated 26 economic sub-regions in Appalachia and made projections of growth (in terms of population, employment and income based on historical trends).

Initial investigations and review of potential projects in Appalachia were begun by the TVA and twelve Corps of Engineer Districts, initially concerned in the study. Those studies were conducted on river basin boundaries assigned to them.

A letter, "Interim Guidance for Appalachian Water Resource Planning", was issued 21 March 1966 by APS confirming decisions reached in Birmingham. APS commissioned U. S. Geological Survey to prepare a base map of the Appalachian Region. The Virginia General Assembly enacted a law requiring that all water resource planning be keyed to the Investment Plan.

Richard Howes and Associates, economic consultants, were contracted with to make a feasibility study of an analytical economic system (input-output) for the Appalachian Region.

The Division of Water was organized within the Kentucky Department of Natural Resources.

APS cooperated with ARC in employing the Fantus Company, Inc., to make a series of industrial 'Location Research Studies' in the Region.

Robert R. Nathan Associates, Inc., was hired by ARC and APS to study 'Recreation as an Industry'.

Flood plain mapping was begun by U. S. Geological Survey, at 37 selected locations, at the request of ARC.

ARC contracted with Economic Research Service of USDA to produce an 'Economic Data Book' for Appalachia, and to study impact of rural recreation enterprises.

The several states completed their interim 'State Recreational Plans' pursuant to the Land and Water Conservation Act of 1965.

Kentucky passed a new strip mining law.

Maryland issued a report entitled 'Western Maryland Mine Drainage Survey, 1962-65'.

Agreements were made with state agencies in Alabama, Georgia and South Carolina for assembling of state water laws, plans and programs.

An interim report on 'Study of Strip and Surface Mining in Appalachia' was issued by the Secretary of the Interior.

Within APS, during this fiscal year, 3 professional staff members were added to the Engineering Branch; 2 to the Economics Branch; and 1 to the Administrative Branch. The permanent staff was augmented by 10 temporary employees (graduate students) during the summer of 1967.

e. Fiscal Year 1967. The third WDCCA meeting was held in Pittsburgh, Pennsylvania 6-8 July 1966. Paragraph 108 of the Plan of Survey, which required of each coal-producing state a report on the mine drainage pollution situation and appropriate control laws, was discussed. Cooperating offices' plans and progress were discussed.

Each state completed its first 'State Investment Plan' and forwarded it to ARC. The latter found deficiencies in many, and major revisions were required. This impeded water resources planning.

The work of developing outlines for each report component (as specified in the Plan of Survey) began.

Study coordination meetings were held in all twelve states.

ARC contracted with the States of Ohio, Pennsylvania, Maryland, and West Virginia to make a highway impact (economic) study of two Appalachian Corridors.

ARC contracted with the Brunswick Company to gather data on Appalachian public service facilities.

ARC contracted with the University of West Virginia to prepare an "Appalachian Bibliography."

On 2 September and 11 November 1966, President Johnson issued directives that federal agencies use planning areas set up by the states wherever possible.

APS divided the Appalachian Region into 10 water sub-regions for study and report purposes. Sub-region report responsibility was placed with nine Corps of Engineer Districts and the TVA. Basically, the boundaries were selected considering basin, planning district, and economic subregion boundaries.

Two resolutions of the ARC, Numbers 96 and 97, were issued 14 September 1966, requiring that planning be tied to potential growth centers - as had ARC Resolution No. 6, earlier.

Evaluation Procedures for Appalachian Water Resource Planning, a working draft, was distributed 23 September 1966, explaining the project impact evaluation procedures developed by APS. On its approval of the draft, OCE requested preparation of a pilot project report that would test the Procedures.

The Business and Defense Services Administration (BDSA), of the U. S. Department of Commerce, contracted to study "Water Use by Appalachian Manufacturers" for APS.

A series of workshops to acquaint Appalachian Water resource planners with the proposed Evaluation Procedures was held in late September-early October.

The term "Developmental Benchmark" was coined by APS staff and defined as a desirable and attainable developmental goal, with statistical projections of an Appalachia that would achieve a relative parity with the U.S.

Initial stage project selection planning studies were completed on 1 October.

Howes and Associates' "Analytical System for the Measurement of Economic Impacts in Appalachia," an initial feasibility study, was completed in October 1966.

"Recreation as an Industry," a report by Robert N. Nathan Associates - Resource Planning Associates, was delivered to ARC. This report concluded that if an area had any other economic option, first priority should not be given to developing recreation industry since this industry, acting alone, does not foster widespread economic development.

Richard Howes and Associates was employed by APS to develop an "Input-Output Model" to display inter-industry economic flows in Appalachia.

The fourth meeting of the Water Development Coordinating Committee was held in Cincinnati, Ohio, 26-27 October 1966. A planning progress report and a list of projects to be studied further under Appalachian criteria were presented by Corps Districts, the Soil Conservation Service, TVA and others. The study then scheduled for completion in mid-1968 was reported to be slightly behind schedule.

Spindletop Research, Lexington, Kentucky, was awarded a contract by APS to develop methods of evaluating and allocating multi-program benefits and for sequencing public investment.

Project screening meetings were held with all Corps Districts and State planning groups in Cincinnati during December 1966 and early January, 1967. Priorities for project studies were established.

In November 1966, a contract was awarded by APS to Spindletop Research for a "flood-free" economic development plan for the area of the Tug Fork of the Big Sandy River in Kentucky and West Virginia. The contract was terminated in December after a negative preliminary report.

It was then decided to initiate a "pilot study" of the Upper Licking River in the vicinity of Salyersville, Kentucky to demonstrate the interrelationship between water resources development and overall economic development.

Spindletop Research was then employed by APS to prepare an economic plan for a six-county area in the Upper Licking River Basin in Kentucky.

"The Appalachian Location Research Studies Program" for the 25 industries studied was completed by the Fantus Co., Inc., for ARC.

The OBE projection studies were completed - subject to review.

The Brunswick Company's completed data file on public service facilities was delivered to ARC, and thence to WDCCA cooperating offices.

The fifth meeting of the WDCCA was held in Atlanta, Georgia, 15-16 February 1967. The meeting was to acquaint cooperating planning offices with the use of expansion benefit analysis procedures. Results of project screening meetings were reported. A list of projects for further study and inclusion in the final report was presented.

Governor McNair signed a bill to establish the South Carolina Water Resources Planning and Coordinating Committee on 1 March 1967.

Plan of Survey Exhibit 19 - Economic Base Study Information - was distributed. This set the tentative developmental benchmarks, subject to testing during plan preparation.

Governor Hulett C. Smith appointed a West Virginia Water Resource Committee, with state-wide coordinating responsibility, in May 1967.

Workshops with Corps and other Federal and State agencies were held in Atlanta, Georgia 15-16 May and in Washington, D. C. 22-23 May on application of Evaluation Procedures to specific types of water projects.

An economic analysis for each of the 10 water sub-regions in Appalachia was written in APS. These analyses were prepared during the summer of 1967 under a program that utilized graduate students in economics and geography.

Meetings to coordinate planning and report writing were held between federal and state agencies in New York, South Carolina, North

Carolina, West Virginia, Ohio, Kentucky, Virginia, Georgia, Pennsylvania and Tennessee. Coordination meetings were held in all Corps Districts by APS engineers and economists concerned with Sub-region Reports.

The 1967 Amendments to the Appalachian Regional Development Act was passed on 11 October. Twenty counties in Mississippi, two in Alabama, one in Tennessee, and one in New York were added to the Region.

The seventh WDCCA meeting was held in Knoxville, Tennessee 15-16 November 1967. The meeting was concerned principally with planning status and report writing. A resolution calling for continuation of APS, after completion of the report, was adopted by State members.

The Ohio Department of Natural Resources was reorganized to place greater emphasis on accomplishing programs for the development of water and related resources.

President Johnson issued an Executive Order 29 December 1967, assigning his coordination responsibilities in the Appalachian Program to the Secretary of Commerce.

The "Input-Output" Study by Richard Howes was completed and workshops were held for APS and Corps District planners to instruct them in its use.

During fiscal 1967, 6 staff members were added to the Engineering Branch of APS giving it a strength at year's end of 11 professionals and one secretary. Two professionals were added to the Economics Branch giving it a year's end strength of 6 professionals and one secretary. Composition of the Administrative Branch and Executive Office was unchanged. It was in this year that the professional staff reached its maximum size.

f. Fiscal Year 1968. The interim survey report on the Upper Licking River Basin, Kentucky for water resource and related economic development was completed after extensive review by the Secretary of the Army; public notice was issued on 6 October 1967.

The eighth WDCCA meeting was held in Cincinnati, Ohio 8 May 1968. The meeting was concerned with reorganizing the final report itself into a form that: (1) would be more useful to all study participants; and (2) would more efficiently display sub-regional plans. Revision of the work schedule to accomodate these changes was discussed.

Special project evaluation studies were performed by Georgia Institute of Technology staff for the Coosa River Navigation and Dalton Reservoir Projects.

By year's end the Engineering Branch in APS had lost 3 professionals, but added 2 draftsmen and a secretary. The Economics Branch had a net loss of one professional which was offset by adding two professionals, part-time. The Administrative Branch strength was increased by adding four clerk-typists.

g. Fiscal Year 1969. Effort during this year was devoted primarily to completing drafts of the reorganized report components; analyzing comments received thereon; resolving conflicts between the comments; and preparing the finished components. By year's end, 10 of 25 report volumes had been printed, bound and were ready for distribution.

Many changes occurred in the staff of APS during this year in anticipation of completing the office mission and due to the shift in emphasis from conducting studies to preparing report components. By years end, the Engineering Branch had lost two professionals and added 3 draftsmen. Economics Branch lost two professionals. The Chief, Administrative Branch was transferred and the number of clerk typists reduced by 3. To offset some of these losses, the remaining staff was supplemented by "temporary duty" personnel from Corps District and Division offices.

h. Fiscal Year 1970. The ninth WDCCA meeting was held in Cincinnati, Ohio 3-5 September 1969. The meeting was held as a continuing workshop seeking to arrive at final drafts of the report elements. The meeting was successful and the remaining report volumes, except the one containing this Part VI, were ready for printing by 10 October 1969.

Public Notice for the Report for Development of Water Resources in Appalachia was issued on 9 April 1970 by the Office of the Secretary of the Army.

The Office of Appalachian Studies, U. S. Army Engineer Division, Ohio River was abolished on 30 June 1970 by General Order of the Chief of Engineers.

2. THE PLAN OF SURVEY

A "Procedural Plan of Survey" was written by a task force of Corps of Engineers personnel, attached to the Office, Chief of Engineers, as soon as indications were received that the Congress would add Section 206 to the original Act. The group started in May and completed their work in August 1964. Their document served as a guide for the coordinated Plan of Survey produced by the study participants with leadership from the later created Office of Appalachian Studies.

A draft Plan of Survey was distributed on 13 January 1966. It represented the best judgments and efforts of everyone in the cooperating offices and by WDCCA members. Each cooperating office staff had, in fact, developed its own plan of survey, and the many plans had been brought together in one document by the Office of Appalachian Studies.

Comments were received and revisions were made. The revised draft was reviewed and adopted, with some changes, at the second WDCCA meeting in February 1967. The Plan of Survey became a "living document . . ." to be changed as required to insure that our planning remains an integral and harmonious component of the regional economic development program . . . The document had 14 sections and ultimately 19 exhibits (attachments). The Table of Contents is included as Exhibit 4 to this volume.

3. BUDGET

In setting up the budget each participating office was asked to estimate the amount of money required to complete the part of the study for which it was responsible, requesting only those additional funds needed to meet the work schedule over and above its going program. To assure that appropriate coordination would be effected, budget discussions were held during scheduled meetings of the Water Development Coordinating Committee for Appalachia. Funds were not transferred to the States.

SUMMARIZED FINANCIAL STATEMENT

	<u>Plan of Survey Estimate</u>	<u>Actual</u>
Approved Federal Cost Estimate	\$ 5,000,000	\$ 5,000,000
Allocations by Fiscal Year		
1965	\$ 54,000	\$ 1,500,000 *
1966	1,446,000	
1967	1,830,000	1,500,000
1968	1,394,000	2,000,000
1969	276,000	

* Two year appropriation

For Fiscal Years 1965-67, General Investigations funds were appropriated directly to the Department of the Army (Corps of Engineers). For Fiscal Years 1968 and 69, funds totalling \$2,000,000 were given to the Appalachian Regional Commission by the President to complete the Water Resource Survey. These funds were then transferred by the Commission to the Corps of Engineers, Civil, and then to the participating offices. Additional funds were appropriated by the Congress to the Department of the Army for continuing and special studies beyond the scope of the survey during Fiscal Years 1969 (\$62,000) and 1970 (\$100,000). Quarterly reports on work progress and costs were submitted by each office.

4. OBJECTIVES

In Section VIII of the Plan of Survey, five principal objectives, derived from PL 89-4, were outlined. They were:

--- To develop a comprehensive plan for efficient utilization of the region's water and related resources, designed to stimulate growth and enhance the well-being of its residents, and to meet the region's needs for water resource development.

--- To key the plan to the combined economic development program of the region, constituted from the State and Commission Investment (Development) Plans, when enunciated.

--- To reflect in the plan an improved understanding of effects of water resource developmental investments on local, regional and national economies.

--- To recommend urgently needed programs and projects fully compatible with the strategies for economic development of the Commission.

--- To provide for continuity of planning.

In meeting the first three objectives, a recognition of the relative importance of the economies of regions and sub-regions was necessary. The national viewpoint was enlarged to include the special contributions of regional development. Provision was made for reconciliation of regional viewpoints with national economic and social objectives. In determining the full economic effects of water resource investments, the study group planned to study the effects of such investments and to determine the proper sequencing of public and private investments to obtain maximum local and regional benefits.

The study was planned to include broad area coverage to identify investment programs to improve the regional economy along with detailed investigation of high priority projects. The results were to be integrated into a plan to meet the objectives.

Initial regional economic studies and projections to discover growth trends were scheduled. Sub-regional studies were designed to evaluate locationally desirable (industrial) areas. These findings were to be related to State Investment Plans and Appalachian Regional Commission plans and projections. The total findings were to form, in each area, a planning nucleus from which determined water-related demands can be satisfied. Economic sub-region plans were to be aggregated into a comprehensive regional plan.

The major emphasis was on identification of opportunities for investments in areas with the best developmental possibilities. The selection and analyses of such opportunities included broadened evaluation techniques and criteria. Evaluation Procedures for Appalachian Water Resource Planning (then being formulated) was to furnish needed guidance.

The 31 December 1968 deadline in the Act required that the final report arrive for initial reviews in Washington on 1 July 1968 (this was extended later). To assure continuity of water resource developmental planning, the final report was to discuss those investment possibilities not recommended for early development, perhaps only because time and resources available were not sufficient to complete the needed studies. Guidelines were to be suggested in the report for surveys conducted under future separate authorities and those underway at report submission time. The report was to recommend continuing procedures for planning water resource developments in the Appalachian Region as additional needs became apparent. That was especially true of procedures to be followed through 1971 when the authorization for the developmental program was to expire.

5. GUIDELINES

There were two major groups of published guidelines. The first were guides used in setting up the study, the other, those developed during the study.

a. Guidelines - Preliminary. Most of the general requirements placed on each agency were spelled out in the Plan of Survey, along with a list of programs affected. Directives of importance were issued by and to two of the "construction agencies" involved, the Corps of Engineers and the Soil Conservation Service. TVA officials felt that new directives were not required.

In addition to the letters from higher authority, summarized in Chapter 1 and reproduced in Exhibit 3, general guidelines were adopted in the Plan of Survey by the WDCCA at the beginning of the study. They are paraphrased below:

Problems and projects not clearly inter-related in any system were to be analyzed on an individual basis. Isolated water supply, quality control, and recreation reservoirs would also be analyzed individually.

Problems and projects that were to be analyzed on a system basis were those that have a degree of physical or economic inter-dependence with existing or authorized projects or with other components of the study. Examples of interdependence are: a local protection project located downstream of a flood control reservoir; and locations of industry because flood protection and/or water supply are available, when neither the physical nor the economic development would be feasible without the other.

Project features were to be determined by formulation studies according to the principles outlined in Senate Document 97; in the manuals, circulars, letters, and memorandums of the agencies concerned, and by the maximization of net economic development benefits in accordance with the noted directives above. Requirements were that reservoir projects be developed to provide for all recognized purposes insofar as needs exist or can be foreseen, that flood control storage be adequate to exercise a high degree of control on flood of record, and water supply storage be sufficient to provide optimum yield through the critical demand period.

Water quality storage to insure the recommended yield for a worst seven days in ten years recurrence interval to meet conditions projected to the year 2020 was to be provided. In the absence of standards yet set by the States and approved by the Secretary of Interior, the assumption that controlled whether water quality storage was to be considered was that at least 85% of BOD was to be removed by secondary treatment.

Requirements were set that planned urban levee projects provide a high degree of protection, preferably to Standard Project Flood; that rural levees (agricultural) normally provide protection

against at least the highest stage to be expected once-in-five years, that urban channel improvements provide for the flood of record; and that rural channel improvements be planned to contain the highest flow feasible from both economic and practical viewpoints.

Upstream watershed projects were to be formulated to meet standard criteria of the accelerated watershed program, including urban economic development purposes.

Cost and benefit evaluations were to be made using July 1967 prices (later changed to July 68) for a level of national economic activity on a relatively high plane at nearly full employment. The existing political, economic and social structure of the United States was assumed to expand substantially as recently experienced, and there would be no national disaster in the form of war or natural phenomenon.

The interest rate to be used in plan formulation and evaluation, for future benefits, computing costs, or otherwise converting benefits and costs, was the rate established by the Treasury Department for FY 1968, at 3-1/4 percent. (Most projects were later also figured at the FY 1970 rate of 4-7/8 percent.) The rate for use in computing "associated" costs was to be that most commonly found in the market for the particular use. Further instructions were later issued in Evaluation Procedures for Appalachian Water Resource Planning. Current prices were to be used for all purposes except in areas such as agriculture, where prices fluctuate considerably from year to year. The bases to be used for these products were later provided by USDA.

Projections were to be stated for population trends considering urbanization, employment and income, productivity, and improved technology. The period of analysis was to be the shorter of the physical life or economic life of the structure, facility, or improvement with a maximum life of 100 years.

The WDCCA agreed that the cost-benefit data used in the initial investigations be of preliminary scope, and generally be the data available in the action offices, supplemented by information from APS. Costs, benefits, and allocations made in the final studies were to be of "survey report scope" for projects to be recommended for authorization and, for other projects, adequate to demonstrate compatibility with the comprehensive plan. Progress of studies was to be monitored by quarterly reports from each participating federal agency and Corps district.

The economic needs and potentials of Appalachia were to be analyzed to formulate a water resources development plan aimed not only toward meeting present and future water resource needs, but also toward stimulating general economic growth. The planning process was to involve several concepts that served to guide the planning effort. Primary among those concepts were: effective timing and sequence, complementary relationship with other economic development programs; and conformity with criteria (B/C, incremental, and scale analysis).

The dynamics of each sub-region were to be analyzed in the light of the historical forces which shaped its development, and in terms of the development plans of the states. The requirements of specific industries were to be compared with the existing or potential advantages in the sub-region as determined by location studies. In determining how public investments can optimally utilize those competitive advantages, it was necessary to analyze the availability and adequacy of the factors of production - human, capital, and natural - which form the basis for growth. Finally, the projected impact of water resource investment was to be evaluated through regional impact studies.

After conducting the initial investigations which are broadly based, the development of the tentative comprehensive water resources plan was to be founded on a careful look at the needs and opportunities for resource development in each of the economic sub-regions. Both needs and opportunities, viewed in the dynamic sense, coupled with the development proposals from the State plans and ARC, would help identify the places of significant potential, given solution of water resource problems. Other water problems which had no immediate connection developmentally, but which may have significance for long run regional growth, were to be studied. Specific development proposals were to be formulated to serve as the nucleus around which planning could proceed in priority areas. A project or program which seemed to offer promise of meeting major developmental objective or objectives, with both physical and economic implications, would form such a nucleus.

An inventory of water resources projects and programs in operation, under construction, or in advanced stages of planning, was the first step in planning. In addition, a number of special studies were proposed. These included time-phased projections by sub-regions of attractive industrial locations for industries dependent on water for processing, cooling, effluent disposal, transport and recreation; and projections of land use by regions, areas, and communities, with emphasis on recreation and plant location problems.

The core of the project formulation problem rested in the systematic consideration of alternatives, weighing of the advantages and disadvantages of the several possible ways of meeting resource needs, and least cost fulfillment of the requirements to approach foreseen potentials for regional and national growth. In this process benefits and costs of plan features were to be estimated, larger and smaller scales of development considered, and plan features added and omitted.

Efficiency checks on legal and social factors such as tax structure, land ownership patterns and willingness to pay as they relate to the effectiveness of project alternatives were provided. Investigations were set up to study the relationship of the time horizon of need satisfaction; the choice of single purpose versus multiple purpose alternatives; and the implication of regional and national trends in technology. Reports were to include discussions of the alternatives tested and the reason(s) those not recommended were rejected.

b. Supplemental Guidelines. Guides developed during the study stemmed from letters of comment and recommendations for improvement between the participating groups; and those from higher authorities (within agencies) to action and cooperating offices. In addition, several significant guides were proposed from research, and through inquiry by planning groups and consultants under contract.

Projections by the Office of Business Economics, U.S. Department of Commerce, of population, employment, and income of economic sub-regions within the Region were the bases for further APS projections (the developmental benchmarks).

On 2 September and 11 November 1966, President Johnson issued directives requiring that federal agencies use planning areas set by the States wherever possible.

Evaluation Procedures for Appalachian Water Resource Planning, which was produced by the Office of Appalachian Studies staff, served as a guide in formulation studies.

The Appalachian Location Research Studies Program, completed for the Appalachian Regional Commission in 1966, provided considerations and recommendations followed in selecting areas for more detailed planning.

The 'Developmental Benchmarks' or goals in population, employment and income to bring the Region up, to approach national participation rates, were basic elements in program formulation and were first published in January 1967 in Exhibit 19 to the Plan of Survey; and later revised and published in Appendix E in the final report.

The Interim Survey Report for Water Resource and Related Economic Development of the Upper Licking River Basin, Kentucky, completed in October 1967, was a landmark pilot study. The report, along with the companion reports of Spindletop Research, Inc., of Lexington, Kentucky and papers by APS staff economists served as references for formulation of other programs.

The "Input-Output" studies of Howes and Associates, completed late in 1967, served as review references for elements of the plan. Their value will be greater in future studies.

6. MAJOR STUDY PHASES

The Appalachian Water Resource Survey was one of the most complex study assignments ever given to the several federal (and state) water resource development agencies. The extent of the region, its hydrologic diversity, and the numbers of states, state agencies, federal agencies and regional offices involved highlighted the necessity for coordinated plan development. In addition, there was the early deadline for completion of the studies.

The Office of Appalachian Studies acted as the executive agent for management of the survey. The efforts of each of the staffs of the thirty action offices and fifteen cooperating offices, along with those of the many other state and federal contributors, were important elements in the study. The investigations of water resource development needs and possibilities is a continuing process normally flowing from one milepost, or checkpoint, to the next. However, for purposes of coordination and reasonable standardization, economic analyses and engineering investigations and designs were considered as being performed sequentially in four phases: initial, project screening, project formulation, and final.

a. Initial Investigations. The investigations made in the initial stage consisted of both engineering and economic studies for the selection of basins, watersheds and individual projects for developmental investment study in conjunction with and in support of a pattern of regional growth and development. Project purposes included provision for flood protection, water supply, water quality control, hydroelectric power, navigation, irrigation, drainage, recreation, fish and wildlife conservation and related purposes. The initial investigations were made using existing information, exercising the best possible multiple judgments as to how projects might ultimately fit into a plan for regional growth and development. Considerations in the initial development of potential projects included (but were not limited to) the following: historical growth patterns; existing economic base studies; SMSA's; known flood problem areas; known and projected water supply and water quality needs; potentials for recreation and fish and wildlife development; and special desires and plans of local interests. The investigations recognized known existing and evolving developmental programs of ARC and other federal and state agencies.

Early in the survey, a tentative work schedule was developed, as shown on the following page. The actual work period was longer primarily because of staffing limitations and additional special studies assigned; the actual production timing is also shown.

Much of the initial investigations work was done by the action offices of the Corps, SCS (plus SCS field offices) and TVA. APS personnel assisted by coordinating these individual efforts. State agencies participated by providing data and investigating projects in which the state was particularly interested.

The preliminary projections of sub-regional historical trends of population, employment and income developed by the Office of Business Economics were a basis for initial stage studies. Finally, formulated projects were evaluated with consideration of Appalachian Developmental Benchmarks, or goals, developed in APS in 1967 (See Appendix E to the report).

It has been noted earlier that some studies usually considered supportive to project analyses were being conducted concurrently with such analyses during the Appalachian Water Resource Survey. It was

WORK SCHEDULE

ITEM	STUDY AGENCY	COMPLETION DATE	
		Scheduled	Actual
a. Projections	Office of Business Economics	31 Jul 66	31 Jul 66
b. Initial Stage	Corps of Engineers Tennessee Valley Authority Soil Conservation Service Bureau of Mines U.S. Geological Survey Bureau of Outdoor Recreation Fish and Wildlife Service Forest Service Federal Power Commission FWPCA	31 Aug 66	30 Sep 66
c. Project Screening	Office of Appalachian Studies, States and Field Offices (partially concurrent with initial studies)		
d. Tentative Plan Development	Office of Appalachian Studies and Action Offices (partially concurrent with initial studies)	30 Sep 66	20 Jan 67
e. Projections "with the program"	Office of Appalachian Studies, Appalachian Regional Commission, etc.	31 Oct 66	Mar 68
f. Mine Drainage Pollution Research	FWPCA Bureau of Mines U.S. Geological Survey SF&WL Corps of Engineers Tennessee Valley Authority Soil Conservation Service Forest Service	31 Dec 66 30 Jun 67	Feb 67 Sep 67
g. Final Stage	Corps of Engineers Tennessee Valley Authority Soil Conservation Service Bureau of Mines U.S. Geological Survey Bureau of Outdoor Recreation Fish and Wildlife Service Federal Power Commission Forest Service FWPCA	30 Nov 67	Aug 69 Jun 68
h. Draft Report	Office of Appalachian Studies	15 Mar 68	Jun 69
i. Field Review	State and Federal Agencies	15 May 68	Aug 69
j. Public Notice	Ohio River Division	1 Jul 68	30 Oct 69
k. Submit	Office of Appalachian Studies	1 Jul 68	*
			8 Oct 69

* Issued by Office, Secretary of the Army in April 1970.

necessary for the action offices to conduct initial program studies with only preliminary estimates of water management needs in hand. This condition continued well into the project screening stage and, in some cases, into the early and even late stages of the project formulation phase.

The APS staff worked with action offices by assisting in or facilitating their program evaluation work whenever possible. In addition, APS and ARC set about to obtain new Appalachian evaluation methods and procedures through contracted research and staff efforts. The early efforts were to evaluate the effects of removing water-related restraints to economic growth. The first step was to determine the interdependent relationships of the various elements of the economy. Those studies included land use and development by SCS, TVA, USGS, Corps of Engineers and ARC. The ARC staff, working with the States, located centers around which economic growth was possible or probable. The major preliminary step was the production of the State Investment Plans in 1966. APS assisted action offices in selecting those areas in which potential growth was being inhibited by lack of appropriate water controls or management. Finding those areas in which the greatest growth would occur with proper development and management of the water resources was the ultimate goal.

b. Project Screening Studies. The following discussion includes some activities carried out during initial investigations; it also covers some activities actually performed during project formulation studies.

The Tennessee Valley Authority directed their studies toward updating and extending their development plan for the Tennessee Valley portion of Appalachia. TVA made a general assessment of the remaining and projected water resource problems. From that study they developed an overall program for their solution within the framework of the Appalachian Act. Projects that had developmental possibilities were selected for further study.

The Corps Districts performed general investigations of reconnaissance scope for the rivers not recently studied by the District. They reviewed the findings of more recently completed studies, and the proposals or status of those in progress. They examined purposes of existing and authorized projects to determine the possibility or desirability of rescoping them by reallocating storage or adding additional storage. (Generally, results were negative.) During that period, special effort was expended to gain the most complete knowledge of the economic conditions and growth possibilities of the Region as possible. New and inactive projects which had developmental possibilities were selected for further analysis using new economic concepts.

The Soil Conservation Service personnel studied all of the watersheds for which they had received applications for planning, in which planning or construction was in progress, and completed projects - under authority of the Flood Control Act of 1944 or the Watershed Protection and Flood Prevention Act of 1954 (PL 83-566, as amended). It was impractical to develop programs for all remaining upstream watersheds; hence those having developmental possibilities - 100 other watershed areas selected on the basis of their apparent place in local economy improvement - were chosen for further study. The Forest Service offices assisted other agencies in analyzing program impact on public and private forest lands. They shared the planning responsibility for recreation developments on Forest Service lands and assisted SCS in watershed studies. The Economic Research Service assisted ARC in special economic analyses in the Region and assisted in SCS planning.

The Federal Power Commission worked with the Corps of Engineers and Department of Interior marketing agencies (SEPA) in power studies. They furnished projections of hydroelectric power needs, market values and transmission requirements.

The Southeastern Power Administration (SEPA) furnished views on power marketing.

The Federal Water Pollution Control Administration, with APS, the states and Bureau of Mines, made an inventory of streams being polluted by acid mine drainage. The Bureau of Mines (BOM) provided a general description of the mineral resources of the area and estimated their future development. They estimated (projected) future demand for water use in mining for FWPCA supply studies.

The U.S. Geological Survey (USGS) evaluated the ground water aquifers and reservoirs of the Region and assisted in stream pollution studies. The Bureau of Outdoor Recreation (BOR), in coordination with APS, SCS, Corps Districts and TVA, estimated the recreation needs for parts of the Region and made preliminary estimates of the recreational use of projects being considered.

The Bureau of Sport Fisheries and Wildlife, and the Bureau of Commercial Fisheries, inventoried the fish and wildlife resources of the Region and estimated their potential against the Appalachian benchmark projections. The National Park Service (NPS) identified historical, archeological and natural science resources in the Region, but basically only in the areas affected by potential projects. Their study included gauging the value of preserving landmarks and areas of scenic beauty.

The Department of Transportation furnished data on stream traffic for use in navigation studies and highway location data. The Department of Housing and Urban Development furnished data on housing needs, and planned developments in the Region. The Department of Commerce coordinated the study with those of EDA and other agencies.

All of the planning staffs leaned very heavily on the Appalachian Regional Commission (through APS) for information on developmental needs and plans of the States and their Local Development Districts.

The state agencies cooperated in all areas of the study. They furnished data on population and economic growth, water needs, recreation needs, acid mine drainage, pollution, mineral and water resources, environmental quality, and local development aspirations and restraints. This information formed the completing link in the chain of resource analysis.

c. Project Formulation. The Corps Districts analyzed programs and projects using procedures contained in APS's Evaluation Procedures. These were supplemented by special recommendations developed during research analyses: e.g., those contained in the Upper Licking River Interim Report (Salyersville, Kentucky). It was not possible that all projects with developmental possibilities be studied in detail; indeed, not all of the most-needed projects or systems could be completely studied because of the time and resource limitations. Rather, those studied served as a reference for general consideration of other similar projects.

Studies of power generation as a project purpose were coordinated with FPC and SEPA. Projects which were in coal-bearing areas were reviewed by state geologists and BOM engineers.

The FWPCA furnished revised estimates of water needs for municipal and industrial use and for quality control (low flow regulation). At the same time they were reviewing the water quality control standards of all of the States. They conducted a study with APS and the States of the extent and implications of stream pollution from mine drainage.

APS coordinated the development of recommendations for control of pollution from mine drainage with the ARC, FWPCA, BOM and the coal-producing States. The Soil Conservation Service and Forest Service reported techniques to reduce percolation into mines.

SCS analyzed upstream watershed programs using Appalachian procedures in formulating the final Plan (Appendix A). They developed programs which contained water storage for flood prevention, water supply, recreation, fish and wildlife improvement, and sediment control. The Forest Service cooperated in recreation planning in all cases and in general planning on Forest Service lands.

The construction programs formulated by the Corps office and SCS were coordinated with other study groups. Ground water supplies were studied with USGS as an alternate source for municipal water supplies. FWPCA cooperated by providing stream flow requirements for pollution control through low flow augmentation. The Bureau of Mines helped analyze the impact of projects which would result in the flooding of coal-rich and other mineral areas. BOR analyzed projects by defining

project service area and the future use by recreationists. The National Park Service assisted in planning around scenic and historical areas to be preserved. The plan was coordinated fully with Federal Highway Administration plans.

The appropriate state agencies cooperated in the analyses of all the projects and made some of the recommendations for consideration of other projects and programs in the future.

Near the end of the project formulation stage, it was determined that more or different information was needed in some of the reports. The States agreed to enlarge the scope of their supplements to the Water Sub-region Reports. Most of the Appendices to be written by the APS staff were rescoped and renamed so as to assure complete coverage of all facets of the study. Largely, the data generation was reorganized and incorporated in the Plans (Part II), or in the Projects (Part III) portions of the Main Report.

d. Final Investigations. Pervading the preceding three phases was the concept that: (1) projects being screened and tested had to be the best solutions to an area's water needs and (2) they had to be compatible with a regional water resources plan that would have both structural and nonstructural components. Through a constant interchange and updating of data on the projected regional economy, on attendant water resources needs, and on capabilities of study projects and programs to meet these needs, the plan became more definite as studies progressed. The plan at this point was composed of 3 basic elements; structural measures such as multiple purpose reservoirs; nonstructural measures such as land treatment, and future studies. After selection of this tentative plan, final investigations proceeded in the action office concerned. Draft final reports covering program and project plans, cost estimates and benefits were written. Structural and non-structural measures which were part of a plan being prepared in response to Congressional resolutions, or under other funds and authorities, were reported by the action office concerned, and coordinated, and recommended for authorization in appropriate channels. Pertinent information is included in this report on Appalachian water resource development supporting the recommendation of such elements as part of the total Appalachian plan of improvement. Specific recommendations for construction of TVA projects, SCS work plans and capital improvements in the National Forests, although such projects form a part of the Appalachian water development final plan, will be submitted in normal agency channels. Recommendations for alteration of authorized projects or reallocation of storage within an existing project, or for necessary water or related projects or programs for which authorizations are needed, are included in this report. Studies by cooperating offices are Appendixes to this report.

7. STUDY COORDINATION

Coordination involved the deliberate review of the working papers, plans and recommendations of one office or agency and their detailed comparison with the working papers, plans and programs of another office

or agency to integrate the plans harmoniously for maximum benefits. The end result of good coordination is the integration of the plans of all interests (federal, state, local, public and private) into a composite and interrelated program. Those involved in the Appalachian Water Resources Survey faced a real challenge to coordinate the efforts of over two dozen action offices and many other cooperating units. The success of the study was dependent upon proper work coordination as much as any other factor. The full staff of the Office of Appalachian Studies were, in fact, survey coordinators.

At the beginning of the study, it was asked that every state and federal agency concerned with the regional water resources survey make special efforts to assure that the principal action offices have copies of, and were aware of, all pertinent data, both published and unpublished. The action offices (Corps Districts and SCS state offices) were asked to correspond with the appropriate state and federal offices giving the precise data which would be most helpful, as soon as study areas were selected. TVA has authority to plan comprehensively within their 'going programs'.

There was special emphasis on the need for close coordination at the first WDCCA meeting. By that time, much cooperative work had been done in gathering data on the status of water resource management within the Region by Corps, SCS, TVA, state agencies and local governments and industries. APS was the hub for overall coordination.

At the start of the project screening stage (PSS), action offices informed all cooperating agencies and made specific contacts with certain federal agencies, and with the appropriate state member(s) of the Water Development Coordinating Committee for Appalachia.

Many planning activities had to be carried out concurrently because of the scope of the study and the limited time allowed. TVA and the action offices did not have all desired projections of growth at the start of PSS; in fact, detailed projections of growth or development could not be made in some cases until notice of the possibility of removing some water related impediment to growth was given. They reported to the Office of Appalachian Studies an estimate of the developmental goals and growth possibilities that had been identified during initial basin or watershed studies. APS analyzed them, and coordinated with the Appalachian Regional Commission. Potentials were then discussed with TVA and the action offices as to whether the goals appeared to be "integral and harmonious" with the Appalachian program. Consideration of developmental benchmarks was a key item in that review.

In all cases where recreation appeared to be a potential project purpose, action offices wrote to the Bureau of Outdoor Recreation (BOR), described the recreation aspects, and invited participation during project screening. BOR accomplished necessary coordination with National Park Service and Forest Service.

The Bureau of Sports Fisheries and Wildlife (SF&WL) participated in project screening with action offices when the particular problems and potential scope of biological resource development dictated. SF&WL accomplished necessary coordination with Bureau of Commercial Fisheries. Both then provided detailed inputs to project analyses.

Action offices had not received firm projections of water supply and water quality control needs from the Department of Health, Education and Welfare during PSS. FWPCA participated in project screening with action offices at the same time they were determining needs. Revision of developmental benchmarks resulted in some project re-evaluations. FWPCA moved to Department of the Interior 10 May 1966.

Action offices reported start of PSS to action offices having overlapping hydrologic responsibility; i.e., the Corps of Engineers District reported to the appropriate State Conservationist, SCS, or vice versa. The reports described the potential scope of water resource development, and invited comment on overlapping purposes and benefits in parallel studies. In cases of overlapping resource development planning, participation during PSS included joining planning forces to select cooperative programs for further study. SCS coordinated Economic Research Service and Forest Service efforts through the USDA Field Advisory Committee, headquartered in Morgantown, West Virginia.

State WDCCA members were informed and asked to cooperate in screening projects with TVA, Corps and SCS.

Cases of coordination requirements beyond those listed above during Project Screening Stage were:

Projects in mineral-rich areas were evaluated with special consideration to value of the minerals. That work was coordinated with the Bureau of Mines engineers, who were responsible for preparing a project report.

The National Park Service was advised of project studies in areas of known historical or natural science values. They, in turn, developed an inventory of such areas for the use of planners. The final report by NPS reflects such investigations.

The Forest Service was consulted as to possible project effects on timber production, forest hydrologic conditions, conservation and aesthetic values. The Service was also consulted regarding recreation development potential when major reservoirs were being considered for location within or adjacent to National Forest boundaries. The Service prepared recreation plans within National Forest boundaries.

When it appeared during PSS that any Corps of Engineers project, or combination thereof, had potential for either conventional or pumped storage hydropower, the facts of the case were reported to the Federal

Power Commission (Atlanta) and Southeastern Power Administration. SEPA coordinated with other Department of Interior power marketing agencies involved and reported the repayment capability of each power project.

The development of a system of corridors and local access roads was a major feature of the Appalachian development program. Full consideration was given to the adequacy and compatibility of the highway and road network to water resource developments, particularly reservoir projects. The action office coordinated with federal, state, county and other highway offices in uncovering areas of conflict in plans. In correlating location of stream crossings with corridor center lines for possible mutually beneficial developments, and for cooperation in planning and exchange of information.

Because much of Appalachia's geology inhibits extensive ground water development, this water resource survey was primarily concerned with surface water storage and control. Where there are potential aquifers, development of ground water supplies were always looked into. In cases where costs of surface water supply for municipal and industrial needs appeared higher than normal, ground water alternatives were thoroughly investigated. The U.S. Geological Survey (USGS), in coordination with State and other appropriate Geologists, made ground water supply investigations on request from action offices.

During the Project Screening Stage program discussion meetings were held at various locations in the Region. Representatives of APS, SCS, Corps Districts, and the State WDCCA member and other concerned state agencies attended such meetings. Staffs of cooperating offices were invited and attended as their interests required. It was a most demanding period on all of the action and cooperating office staffs.

All of the cooperating offices were invited to share in planning, or to comment on programs, during the Project Formulation Stage (PFS). The principal problems during the period were related to efforts to incorporate plan elements desired by States into multipurpose projects. It appeared fairly early that a total plan, with projects scoped to satisfy all the water needs for industry, people, quality control, recreation, fishing, irrigation, etc., was not possible. Efforts were concentrated on formulating specific, most-needed projects which would have developmental impact on the economy. In addition, a general overall developmental plan was formulated. In formulating such plans, other reports, such as State Developmental Plans (for ARC), prior water resource studies of all types, ARC research studies and reports, APS research studies, and others, were incorporated. APS, the Louisville District of the Corps, Soil Conservation Service, and a research consultant, (Spindletop Research Inc. of Lexington, Kentucky), developed special recommendations within a pilot plan for the development of the Upper Licking River Basin above Salyersville, Kentucky. Agencies of the State of Kentucky, FWPCA, BOR, FS and others assisted in the planning. Procedures developed and tested in that study were utilized in project formulation throughout the Region by Corps, SCS and TVA.

Early, in 1967, it became apparent that state and local information in hand was not sufficient to formulate projects fully responsive to local needs and plans. An intensive effort was begun by APS to gain the required information. Conferences were held in most of the states seeking their assistance. The real need was presented to state planners by APS, SCS, TVA, Corps Districts, FS, BOR, etc. The states responded by agreeing to write state supplements to Sub-region Reports, expanded to include as much of the needed information as possible.

The data supplied were most useful in formulating the overall plan and in scoping some of the specific, early action 'Appalachian Projects'.

During the entire project formulation stage much of the coordination of ideas and activities was carried out through letters and telephone conversations among planners who were planning concurrently.

8. REPORT COORDINATION

Since the ultimate objective of this entire effort was the preparation of a report that would convey, to many types of readers, information on studies carried out and conclusions reached, considerable effort was devoted to planning the report itself with regard to format and content. The problems involved were somewhat unique because different agencies and even different offices within agencies had to be assigned writing responsibilities. Coordination of this effort to insure against serious duplication of effort, avoid as much repetition as possible and, more importantly, to insure an overall cohesiveness of presentation was a challenging task. It also became obvious early in FY 67 that more than one round of drafts of many components would have to be reviewed and commented on by all interests if a comprehensive plan was to evolve. A further complication was the unusually wide range and background of users expected to use various report components.

An example of this coordination of effort is the study initiated to investigate the problem of acid mine drainage in Appalachia which was recognized by the Congress in 1965 when, in PL 89-4, the words "prevention of pollution by drainage from mines" was listed in Section 206(b) as one of the activities the water resources survey should investigate. However, in Section 205 the Act authorized a mine reclamation program to the Department of the Interior. The Commonwealth of Pennsylvania instituted its own program to eliminate acid mine drainage in the state and, at the 1967 Senate Public Works Committee hearings on amendments to the Act, requested a joint federal-state program specifically to correct this form of pollution.

The Appalachian amendment of 1967 (PL 91-190) directed the Appalachian Regional Commission to conduct a comprehensive study of the problem to include an analysis of benefits and costs. Meanwhile, the Office of Appalachian Studies, in conjunction with the Federal Water Pollution Control Administration, the U.S. Geological Survey, the Soil Conservation Service and the states had instituted an investigation on its own. These

studies were not heavily funded but they nevertheless had produced, by late 1967, data on the incidence of acid mine drainage in Appalachia and had reviewed previous research on methods to correct the problem. These data were made available to the Commission at the inception of their studies and were later published as Appendix C, The Incidence and Formation of Mine Drainage Pollution in Appalachia, to the Commission's report, Acid Mine Drainage in Appalachia. The same Appendix C is also published as part of this report Development of Water Resources in Appalachia.

APS assumed the responsibility for the required report coordination for all other components of the report. As the reports were being written, APS gathered a list of those persons who would review the various reports. Several letters on report form and distribution procedures were sent out. Mailing labels were furnished to each author, along with specially prepared comment forms to be bound into draft report components, torn out by readers, and mailed back to the author.

The APS staff, including reports and appendix writers, were exceptionally busy during the distribution of first report drafts because the different elements of reports were not always completed at the same time. All first drafts were distributed in due course and each author received comments from concerned agencies and groups. Action office staffs, cooperating staffs, ARC and WDCCA State members were invited to comment. State members and some Department coordinators consolidated comments and then forwarded them to the report writer. Thirty days was an average period allowed for commenting. About 500 copies of each first draft report element were distributed.

The comments included recommendations for major revisions and additions to the first draft, especially to the Water Sub-region Reports. Many reviewers, especially States' members and the ARC staff, recommended that the Report outlines be completely revamped to put the information on each sub-region in one part of the report. A WDCCA meeting (executive session) was held 8 May 1968. A restructured format was adopted, and work began on revamping both the Plan and the Report.

The APS staff had already been reduced in anticipation of acceptance of the first drafts of the report. In revamping and enlarging the scope of the Sub-region Reports it was necessary to gather much new data. Corps of Engineer District personnel were detailed to APS in an intensive effort to complete the "new" Plan and Report. Review by WDCCA members and cooperating offices was concurrent with report draft production.

The last of the drafts were completed in June 1969 and distributed soon after. The 9th meeting of the Coordinating Committee was held 3-5 September 1969. It was an intensive workshop meeting during which interest groups were assigned a report element and commentors circulated from group to group. (See Chapter 4 - 9th WDCCA Meeting Summary.) All major differences were resolved during the unique session, which was truly a milestone in the history of water resources planning.

CHAPTER 4 - COORDINATION THROUGH THE WATER DEVELOPMENT
COORDINATING COMMITTEE FOR APPALACHIA

1. WDCCA COMMITTEE MEETINGS

There were nine meetings of the WDCCA during the study. They were held at different locations throughout the region so as to provide an equal participation opportunity for the many different sectors or sub-regions. The average attendance at the meetings was about 125. Committee members themselves attended most of the meetings, and were usually represented at the rest. The WDCCA proved to be a most successful vehicle for coordination of an innovative effort. Members freely expressed their views, adopted workable consensuses among their differences, and were normally able to convince their superiors of the viability of the common view. Agendas for the first 8 meetings are attached as Exhibit 5; the ninth meeting did not follow a meeting sequence.

2. PURPOSES OF THE MEETINGS

In addition to the matters addressed in the formal agenda, the meetings were also characterized by many formal and informal conferences among action and cooperating offices and much exchange of ideas through subsequent letters and voice communication. It is the consensus of study participants that the WDCCA meetings were completely successful in satisfying the seven listed responsibilities of the Committee:

- a. To assure that the plan prepared for submission by the Secretary of the Army would meet the needs of the region, and constitute an integral and harmonious component of the program developed under the Appalachian Regional Development Act.
- b. To provide a broad basis for development, presentation and consideration of all pertinent views on the present and future needs of the region and methods of satisfying them, and for full and continuing exchange of views during the survey and preparation of the plan.
- c. To advise and assist all participating agencies in regard to basic objectives, assignments, and work schedules.
- d. To assist in the resolution of problems as they arose.
- e. To periodically review progress of the work.
- f. To obtain insights into and to help evaluate the effects of water resource project investments on the regional and local economies.
- g. To advise on the steps local development districts and communities may take to realize fully the benefits of proposed resource development plans.

The success of the meetings is traceable to the open manner in which they were held. There was little agency 'jealousy' and no personal conflicts. The published minutes of the meeting are, in fact the most valid progress reports of the study process.

3. FIRST MEETING OF WDCCA - ASHEVILLE, N.C., 20-21 September 1965.

a. Attendees. Primary, Alternate and Designated members present at the Committee table were:

Colonel John C. H. Lee, Jr., Chairman	Department of the Army
Robert M. Gidez	Appalachian Regional Commission
Colonel Robert C. Stephany (Alternate)	State of Alabama
Dr. Carl E. Kindsvater	State of Georgia
Stephen A. Wakefield	Commonwealth of Kentucky
Albert R. Miller (Alternate)	State of Maryland
F. W. Montanari (Alternate)	State of New York
Gen. J. R. Townsend	State of North Carolina
Colonel C. T. Foust (Alternate)	State of Ohio
Alan J. Sommerville (Alternate)	Commonwealth of Pennsylvania
Lewis R. Hendricks	State of South Carolina
Linzy D. Albert	State of Tennessee
J. M. Alexander	Commonwealth of Virginia
Bern Wright	State of West Virginia
Thomas B. Evans	Department of Agriculture
Robert E. Graham	Department of Commerce
Richard A. Vanderhoof	Department of Health, Education and Welfare
Fred Wampler	Department of the Interior
Reed A. Elliot	Tennessee Valley Authority
Clarence L. Fishburne, Jr.	Federal Power Commission

Designated Alternates attending but not always at the Committee table were:

Dr. William C. Bell	State of North Carolina
Lt. Col. Matthew H. Hoey	Department of the Army
Norris R. Caryl	Department of Agriculture

Total attendance was 99.

b. Purpose. The first WDCCA meeting was held to arrange full exchange of information among the cooperating offices. The members and cooperating state and Federal planning groups became acquainted with the goals of the water resources survey, and with each other.

c. Program. The Chairman discussed the mission and operating procedures of the Committee. He emphasized the importance of information and data exchange and asked that the consensus, or "Quaker Rule", for decision making be used by the Committee.

Status reports of the going water resource management programs and investigations of the Departments of Agriculture, Army; Health, Education and Welfare; and the Interior, were given, along with that of TVA.

A representative of each of the 12 States discussed the status of state and federal water resource programs and pointed out problems which should be studied, and mitigated or solved, by the programs to be proposed at the end of the survey.

Water resource planning for economic stimulus and growth was discussed by the Chief of the Economics Branch, Office of Appalachian Studies (APS). The need for detailed knowledge of local (region) and the national economies was pointed out. Refinements in evaluation procedures and the need for further improvements were discussed. He estimated that utilization of such evaluation procedures would increase properly attributable project benefits 25 to 35 percent over "conventional" procedures. (Note: Later procedures developed two indices of performance, one of which is quite similar to the conventional B/C ratio and excludes consideration of the benefits discussed.)

An ARC staff member outlined a proposed research program based on research needs in the areas of natural resources, human resources and capital resources and a developmental economic study and industry market analyses. The natural resources program proposed \$1,000,000 for water resources research.

A general outline of the proposed plan of survey was presented by the Chief of the Engineering Branch, APS.

At a dinner meeting the total Appalachian Program was explained by J. W. (Pat) Fleming, then assistant to the Federal Cochairman and, later, Cochairman himself.

d. Results and Conclusions. The meeting resulted in an understanding of each cooperating staff's inputs to the water resource survey. Arrangements were made for the free exchange of technical data and the development and review of the Plan of Survey.

4. SECOND MEETING OF WDCCA - BIRMINGHAM, ALABAMA, 24-25 FEBRUARY 1966.

a. Attendees. Primary, Alternate and Designated members present at the Committee table were:

Colonel John C. H. Lee, Jr., Chairman	Department of the Army
Robert M. Gidez	Appalachian Regional Commission
Leonard Beard	State of Alabama
Dr. Carl E. Kindsvater	State of Georgia
Robert Knarr (Alternate)	Commonwealth of Kentucky
Herbert M. Sachs	State of Maryland
F. W. Montanari	State of New York
Gen. J. R. Townsend	State of North Carolina
Colonel C. T. Foust (Alternate)	State of Ohio
Alan J. Sommerville	Commonwealth of Pennsylvania
Lewis E. Hendricks	State of South Carolina
Linzy D. Albert	State of Tennessee

Bern Wright
Thomas B. Evans
Robert E. Graham
Richard A. Vanderhoof

Fred Wampler
Reed A. Elliot
Clarence L. Fishburne, Jr.

State of West Virginia
Department of Agriculture
Department of Commerce
Department of Health, Education
and Welfare
Department of the Interior
Tennessee Valley Authority
Federal Power Commission

Designated Alternates attending, but not always sitting at the Committee table were:

Donald Crane
Col. Robert C. Stephany
Guy J. Kelnhofer, Jr.
Dr. Wm. C. Bell
Raleigh Robinson
Ralph L. Hottel
Lt. Col. M. W. Hoey
Norris R. Caryl

Appalachian Regional Commission
State of Alabama
State of Georgia
State of North Carolina
State of Tennessee
State of West Virginia
Department of the Army
Department of Agriculture

Total attendance was 120.

b. Purpose. The second WDCCA meeting was held to review, improve and approve the proposed Plan of Survey. New considerations (perspectives) for economic analysis of water resource projects, and the possible benefits from the ARC's regional knowledge and projected research program to the water resource survey were to be considered.

c. Program. The Chairman pointed out that the first draft of the whole Plan of Survey had been mailed out 13 January 1966 (after many parts had been coordinated with affected agencies), and that comments had been received from many cooperating offices and had been incorporated into the draft being considered. He asked that recommendations be constructive and that they lead to changes that would aid planners in meeting deadlines.

Sections I through XIV of the Plan of Survey were then reviewed in turn by APS staff members. Discussion and recommendations for improvement were noted for inclusion in the approved copy.

J. L. Knetsch of Resources of the Future, Inc., discussed integration of water resource planning into regional economic development planning. He stated that consideration of the economic structure of the region was basic to developmental water resource planning.

An ARC representative discussed research done by Litton Industries on economic development (available to the Committee); and that being done by the Office of Business Economics, U. S. Dept. of Commerce on sub-regional economic profiles. He mentioned other development studies underway and planned by ARC to evaluate all possible impacts of water resource projects.

J. W. Woodruff, Jr., Chairman, Southeast River Basins Interagency Committee, discussed the SERB Commission planning. He cited the element of well-informed local interests' willingness to share costs and to cooperate in a coordinated program as being essential to successful water resource development.

d. Results and Conclusions. The meeting resulted in the resolution of differences concerning the Plan of Survey and its acceptance, in revised form, by consensus. The APS Staff was commended by the Committee for their efforts. The Committee members learned of research, studies and ideas relating to analysis of water resource developments as elements of total regional economic development.

5. THIRD MEETING OF WDCCA - PITTSBURGH, PENNSYLVANIA, 6-8 JULY 1966.

a. Attendees. Primary, Alternate and Designated members present at the Committee table were:

Colonel John C. H. Lee, Jr., Chairman	Department of Army
Robert M. Gidez	Appalachian Regional Commission
Colonel Robert C. Stephany (Alternate)	State of Alabama
Clarence Conway (Designee)	State of Georgia
Colonel J. L. Tucker (Alternate)	Commonwealth of Kentucky
Albert R. Miller (Alternate)	State of Maryland
F. W. Montanari	State of New York
General J. R. Townsend	State of North Carolina
Colonel C. T. Foust (Alternate)	State of Ohio
Alan J. Sommerville	Commonwealth of Pennsylvania
Lewis E. Hendricks	State of South Carolina
Raleigh Robinson (Alternate)	State of Tennessee
J. M. Alexander	Commonwealth of Virginia
Ralph L. Hotte (Alternate)	State of West Virginia
Thomas B. Evans	Department of Agriculture
Robert E. Graham	Department of Commerce
G. H. Ferguson (Alternate) (Water pollution control had moved to Interior)	Department of Health, Education and Welfare
Fred Wampler	Department of the Interior
Reed A. Elliot	Tennessee Valley Authority
Clarence L. Fishburne, Jr.	Federal Power Commission

Designated Alternates attending, but not always sitting at the Committee table were:

R. Otto Amann	Commonwealth of Pennsylvania
Joseph I. Perrey	Department of the Army
Norris R. Caryl	Department of Agriculture

Total attendance was 147.

b. Purposes. Discussions and the field trip at the third WDCCA meeting were keyed to assisting the Committee members in becoming better acquainted with the mine drainage pollution problems in Appalachia. State laws on mine drainage pollution were to be discussed. Progress in planning and in the development of new (Appalachian) planning procedures were to be reported.

c. Program. On 6 July, members and observers were taken on a field trip to view both surface and deep mining areas where unchecked pollution was occurring; where remedial measures had been installed; and where investigations or remedial measures were underway.

The importance of the Plan of Survey as a 'living basic document', which was to be improved as the survey progressed, was noted by the Chairman. The special importance of keeping current Exhibits 13 and 16 (Committee Members and Directory of Cooperating Offices Personnel), was agreed upon by Committee members.

The District Engineer described the many resource developments in the Pittsburgh District of the Corps of Engineers.

Federal Water Pollution Control Administration representatives discussed the goals of their program for acid mine drainage pollution control, and their research on, and development of, control procedures, through study of different attempts at control. Sealing was seemingly the best method if all pollution sources could be located.

Representatives of the Office of Business Economics, U. S. Department of Commerce, discussed the delineation of the 26 economic sub-regions within the Region. The regions are nodal regions - based on the interrelated economic and social activities of the area and their central, or nodal, centers. They were designed to facilitate economic analysis and projections.

Reports were given by Tennessee Valley Authority (TVA), Federal Power Commission (FPC), and Department of the Interior agency representatives. They each discussed their agency program for Appalachian planning along with changes made and work progress.

The Director, Planning Division of ARC, reported on the projected three-phase research program of the Commission. This included developing a basic data book, conduct of impact studies on rural recreation, and industry location studies.

APS staff reported planning progress and explained the special challenge of developing evaluation procedures as required by the Act. Flood plain information studies of the U.S. Geological Survey, Corps and TVA were discussed and itemized. A Study Flow Diagram, in lieu of a Critical Path Diagram, for the total study was reviewed. The needs for

local labor in construction of water resource projects were presented, along with the suggestion that such projects be used for 'on-the-job' training. Plans for a late summer workshop on Appalachian evaluation procedures were discussed.

U. S. Department of Agriculture representatives reported that 100 'Appalachian' watersheds had been selected for special study. Reports on three of the watersheds, already studied, were discussed. A map of watershed planning activity in Appalachia was distributed.

Each State gave a progress report which included a discussion of: 1) existing control of acid mine drainage pollution; 2) numbers of unemployed; and 3) occupational education programs.

d. Results and Conclusions. All of the participants became acquainted with the great need for improved controls on the disposal or treatment of polluting mine wastes. The special contributions to the study by each 'partner' became better understood, and the need for close working relationships more apparent. For the first time, it seemed possible to all that a useful study could be completed within the time-frame authorized. Cooperating planners showed a great deal of enthusiasm for the challenge presented to them.

6. FOURTH MEETING OF WDCCA - CINCINNATI, OHIO 26-27 OCTOBER 1966.

a. Attendees. Primary, Alternate and Designated members present at the Committee table were:

Colonel John C. H. Lee, Jr., Chairman	Department of the Army
Robert M. Gidez	Appalachian Regional Commission
Colonel Robert C. Stephany (Alternate)	State of Alabama
Arthur Edwards (Designated)	State of Georgia
Colonel J. L. Tucker (Alternate)	Commonwealth of Kentucky
M. L. Rodevick (Designated)	State of Maryland
F. W. Montanari	State of New York
General J. R. Townsend	State of North Carolina
Colonel C. T. Foust (Alternate)	State of Ohio
Alan J. Sommerville	Commonwealth of Pennsylvania
Lewis E. Hendricks	State of South Carolina
Raleigh Robinson (Alternate)	State of Tennessee
Donald B. Richwine (Designated)	Commonwealth of Virginia
W. B. Zunigha (Designated)	State of West Virginia
Thomas B. Evans	Department of Agriculture
Robert E. Graham	Department of Commerce
John D. Faulkner	Department of Health, Education and Welfare
Fred Wampler	Department of the Interior
Reed A. Elliot	Tennessee Valley Authority
Clarence L. Fishburne, Jr.	Federal Power Commission

Designated Alternates attending, but not always sitting at the Committee table were:

Donald Crane
Dr. Wm. C. Bell
Joseph I. Perrey
Norris R. Caryl
Gerald W. Ferguson

Edward Lesesne

Appalachian Regional Commission
State of North Carolina
Department of the Army
Department of Agriculture
Department of Health, Education
and Welfare
Tennessee Valley Authority

Total attendance was 118.

b. Purpose. The meeting was held principally for the assessment of study progress reports. Each cooperating office was asked to inform the WDCCA members, especially the state members, of studies being made and projects being considered in their areas of responsibility.

c. Program. The chairman remarked that difficulties had resulted from the fact that concurrent planning was being attempted by groups which usually functioned in chronologically phased planning. He thought that improvements would be made because of the recent issuance of draft copies of "Evaluation Procedures."

Eleven Corps of Engineers districts reported projects and programs, with study priorities to be studied further. Buffalo, Charleston, Huntington, Louisville, Mobile, Nashville, Norfolk, Philadelphia, Pittsburgh, Savannah and Wilmington Districts reported. Most of the projects reported on filled the needs of, and identified, growth areas. Projects within going Comprehensive River Basin Plan areas were not listed. It was agreed that projects within those areas which met Appalachian criteria could be included in the final plan.

A Delaware River Basin Commission planner, V. S. Hastings, discussed planned projects in the Appalachian portion of the basin. The largest project will be Tocks Island Reservoir, a multi-purpose project on the main stem of the River on the New Jersey-Pennsylvania state line.

The U.S.D.A. representative reported that basic problem and needs studies had been completed on the 100 special Appalachian watersheds. He stated that all needs for water were being considered in the formulation of project plans. Studies were to be complete on 30 of the watersheds by 1 January 1967.

Appalachian Regional Commission staff members reported on research progress. Mr. Gidez reported that industry location studies were progressing well and that Robert R. Nathan Associates - Resource Planning Associates had completed the recreation studies. Mr. Crane reported that small area analyses by the Economic Research Service were on schedule.

Mr. Elliot, T.V.A. representative stated that his agency looked upon the study as a continuation of its program. He reviewed work being accomplished.

R. L. Fulton, Assistant Chief of APS Economics Branch, announced that "Evaluation Procedures for Appalachian Water Resource Planning" had been issued as a working draft, and then discussed the volume. It demonstrated principles and methods to be applied in determining expansion benefits of water resource projects. The recommendations were to be refined and improved throughout the study schedule.

A representative of the Office of Business Economics, U.S. Department of Commerce, stated that users of OBE projections must understand their regional nature, and discussed limited methods of disaggregating them.

Generalized outlines of the Main Report and Sub-Regional Reports were distributed. Col. Lee discussed them briefly and gave a report on planning progress. He stated that the final report would contain specific recommendations on perhaps 20 Corps projects. Mr. A. C. Winters, Assistant Chief, Engineering Branch, APS, discussed the Study Flow Diagram and pointed out that the work was about four weeks behind schedule.

d. Results and Conclusions. The meeting was dedicated almost entirely to progress reports of preliminary planning by Federal agencies. Much progress had been made, though the study was four weeks behind schedule. There was some confusion as to which needs data should be used by cooperating agencies, FWPCA in particular. It marked the end of the second phase of planning - that of selecting the programs and projects to be screened and then analyzed during the Appalachian Water Resource Survey.

7. FIFTH MEETING OF WDCCA - ATLANTA, GEORGIA, 15-16 FEBRUARY 1967.

a. Attendees. Primary, Alternate and Designated members present at the Committee table were:

Colonel John C. H. Lee, Jr., Chairman	Department of Army
Robert M. Gidez	Appalachian Regional Commission
Colonel Robert C. Stephany (Alternate)	State of Alabama
D. John Beck (Alternate)	State of Georgia
Colonel J. A. Thetford	Commonwealth of Kentucky
F. W. Montanari	State of New York
General J. R. Townsend	State of North Carolina
Alan J. Sommerville	Commonwealth of Pennsylvania
Lewis E. Hendricks	State of South Carolina
Linzy D. Albert	State of Tennessee
Louis F. Lombardi (Designee)	Commonwealth of Virginia
Edgar N. Henry	State of West Virginia
Thomas B. Evans	Department of Agriculture
Henry L. DeGraff (Designee)	Department of Commerce
John D. Faulkner	Department of Health, Education and Welfare
Fred Wampler	Department of the Interior
Reed A. Elliott	Tennessee Valley Authority
Clarence L. Fishburne, Jr.	Federal Power Commission

Designated Alternates attending, but not always sitting at the Committee table were:

Dr. William C. Bell	State of North Carolina
Raleigh Robinson	State of Tennessee
Ralph L. Hottel	State of West Virginia
Joseph I. Perrey	Department of Army
Norris R. Caryl	Department of Agriculture
Gerald W. Ferguson	Department of Health, Education and Welfare

Total attendance was 133.

b. Purpose. The meeting was planned to acquaint cooperating offices with methods and procedures being used and to be used in the study. Progress reports were scheduled, involving estimates of the impacts of the screening studies recently completed.

c. Program. The Chairman expressed the hope that each cooperating staff would become fully aware of the great workload to be accomplished within the study time frame during the meeting.

H. L. DeGraff, OBE, discussed the methodology used in making projections for Appalachia. He discussed national economic projections made by the OBE and Economic Research Service, USDA. He presented methods used in making state and sub-region projections and relating them to the nation. Mr. Harrison, Chief, Economics Branch, APS, discussed targets or "developmental benchmarks" which were based on needed economic activities to bring the Appalachian living standards to approach national averages.

A. C. Winters, APS, reported the projects still being studied after the screening studies, which had eliminated those projects which would not become part of an early integral and harmonious overall economic improvement program. Time and funds remaining for the study had been a factor in project selection.

Colonel Lee outlined a pilot economic study of a six-county area in the Upper Licking River Basin centered around Salyersville, Kentucky. The study was made cooperatively by APS, the Louisville District staff and Spindletop Research of Lexington, Kentucky.

R. L. Fulton, APS, outlined procedures for determining project expansion benefits, and Dr. David Spaeth discussed Spindletop Research's work program for the Upper Licking River study. R. A. Matson, TVA Economist, outlined their plan for evaluating expansion benefits for TVA-listed Appalachian projects.

R. M. Gidez of ARC reviewed the completed data collection program by the Brunswick Co. and valuable industry location studies by Fantus Co., Inc. He briefly discussed a proposed Central Appalachian study.

APS staff members discussed planning and report schedules. The need for report coordination was especially emphasized.

T. B. Evans of SCS reviewed PL 566 (83rd Congress) planning criteria. C. F. Lemon, SCS, discussed expansion benefits being received from several watershed structure systems in Appalachia - benefits not evaluated during project planning. He pointed out problems to be solved in estimating future expansion benefits and asked for assistance from APS.

D. H. Reese, Bureau of Sport Fisheries and Wildlife, discussed the challenge of assigning monetary values to recreation opportunities. They were being evaluated on estimated selling prices of recreation privileges and estimated capacities of water resource projects.

G. G. Wyrick, USGS, outlined Section I of Appendix H - Groundwater.

J. F. Anderson, BOR, reviewed the history of the Bureau of Outdoor Recreation from its establishment on 2 April 1962. He discussed the outline for Appendix F - Recreation and Aesthetics.

K. O. Schwab, FWPCA, discussed the study methods of FWPCA in Appalachia. Their studies are based on the goal of water quality for the benefit of man. Dr. P. H. Struthers, APS, pointed out the magnitude and extent of water pollution from mine drainage. He discussed programs and methods to mitigate or stop harmful effects of the pollution.

J. W. Fanning, Vice President of the University of Georgia, pointed out to the group the great challenge before them and the need for coordinated efforts throughout the study.

Colonel Lee reviewed the work to be done within the study time frame. He pointed out the need for every group to work together on projects concurrently to get the job done. He emphasized the aspect of Appalachian projects being formulated to stimulate economic growth. He was optimistic about completing the comprehensive water resource development plan on schedule.

d. Results and Conclusions. The meeting was a highlight in the study. Everyone was made to feel the importance of the work and the need for coordinated effort. Procedures were discussed for formulating Appalachian projects based on economic growth stimulation. The meeting marked the end of project screening and the beginning of final project studies to determine relative position in the final plan.

8. SIXTH MEETING OF WDCCA - BINGHAMTON, NEW YORK, 15-16 June 1967.

a. Attendees. Primary, Alternate and Designated members present at the Committee table were:

Colonel John C. H. Lee, Jr., Chairman
Ralph Widner (Designate)

Department of the Army
Appalachian Regional
Commission

Colonel Robert C. Stephany (Alternate)	State of Alabama
D. John Beck (Alternate)	State of Georgia
Colonel J. A. Thetford	Commonwealth of Kentucky
F. W. Montanari	State of New York
Colonel C. T. Foust (Alternate)	State of Ohio
Alan J. Sommerville	Commonwealth of Pennsylvania
Raleigh Robinson (Alternate)	State of Tennessee
D. F. Jones (Designate)	Commonwealth of Virginia
Colonel Lawrence E. Spears (Alternate)	State of West Virginia
Robert E. Quilliam	Department of Agriculture
Erwin C. Hannum	Department of Commerce
G. W. Ferguson (Alternate)	Department of Health, Education and Welfare
Fred Wampler	Department of the Interior
Roger A. Matson (Designate)	Tennessee Valley Authority
Clarence L. Fishburne, Jr.	Federal Power Commission

Designated Alternates attending, but not always at the Committee table, were:

Nicholas V. Barbarossa	State of New York
James S. Matthews	Department of the Army
Forrest O. Swiggart (Designate)	Department of the Army
Norris R. Caryl	Department of Agriculture

Total attendance was 132.

b. Purpose. The meeting was held at a time when cooperating offices' staffs were scheduled to begin bringing the comprehensive plan into a unit for report purposes. Integration of planning efforts was the theme.

c. Program. The Chairman reminded the Committee members of the need for coordinating and integrating the water and related resource plans so that the Regional Plan would be in consonance with other programs. He re-emphasized the importance of formulating projects on the basis of their value in improving economic levels in Appalachia.

Ralph Widner, Executive Director of ARC, discussed the proper working relationships of the States, ARC and Water Resource Survey staffs. He discussed the State Development Plans and their value in the integral and harmonious plan for the Region. Joe D. Auburg, APS Economist, discussed "developmental benchmarks" and their use in project and plan formulation.

Fred Wampler, Department of Interior Study Coordinator, pointed out problems of Interior agencies relating to the accelerated study schedule. Mr. Glenn Taylor reviewed the programs of the National Park Service; especially those related to preservation of historical and archeological resources.

Mr. B. H. Dodge, Chief, Planning Division, North Atlantic Division, Corps of Engineers, reviewed the North Atlantic Regional Study (NARS) and the Northeastern United States Water Supply Study (NEWS). NARS is a Type I comprehensive study and NEWS approximates a Type II, but is authorized for direct study by the Corps.

Mr. Robert E. Quilliam, new USDA representative, reported that they were beginning report assembly, and Charles Lemon, SCS River Basin Planning Economist, explained the evaluation procedures being used. W. T. Whitman of APS reviewed report schedules and emphasized the agreed-to time frame.

Mr. F. O. Swiggart, Chief, Engineering Branch, APS, chaired a panel composed of Roger Matson of TVA, Ben Netzer of Pittsburgh District, Corps of Engineers, and Kermit Boone of Mobile District, Corps of Engineers, who reviewed their projected Water Sub-Region Reports. It was clear that each still had many unresolved questions as to report content and scope.

Friday morning Mr. Swiggart acted as Chairman because of the illness of Colonel Lee.

Mr. W. E. Tyson, Director of New York State's Appalachian Program, discussed plans for development through investment by private, state and federal sectors of the economy. Mr. N. L. Barbarossa discussed plans and organizations of the New York Division of Water Resources.

Mr. F. W. Montanari, New York member, chaired a discussion of State plans for water resource development. Participants were Colonel L. E. Spears of West Virginia, Colonel C. T. Foust of Ohio and A. J. Sommerville of Pennsylvania. The increase in planning in all resources fields had resulted in problems of both production and study coordination for the states.

Mr. R. W. Harrison, APS Chief Economist reported qualified success of economic seminars on expansion benefits that had been held in May, and offered further assistance by the APS staff. W. E. Leegan, Louisville Corps District, discussed new techniques in project analysis used in a project at Salyersville, Kentucky.

Mr. Swiggart summarized and re-emphasized the need for relating plans to local economic needs.

d. Results and Conclusions. The meeting marked the beginning of report drafting. There were still many unresolved problems concerning project and comprehensive plan formulation. It was apparent that finishing the study on time would require special effort by all.

9. SEVENTH MEETING OF WDCCA - KNOXVILLE, TENNESSEE, 15-16 NOVEMBER 1967.

a. Attendees. All members were represented. Primary, Alternate and designated members present at the Committee table were:

Colonel John C. H. Lee, Jr. Chairman	Department of the Army
Dr. Monroe Newman	Appalachian Regional Commission
Colonel Robert C. Stephany (Alt)	State of Alabama
Joe P. Walters	State of Georgia
Colonel J. A. Thetford	Commonwealth of Kentucky
Herbert M. Sachs	State of Maryland
G. Thompson Pound	State of Mississippi
F. W. Montanari	State of New York
Dr. William C. Bell	State of North Carolina
Colonel C. T. Foust (Alt)	State of Ohio
Alan J. Sommerville	Commonwealth of Pennsylvania
James L. Aull (Designee)	State of South Carolina
Kenneth A. Ackley	State of Tennessee
Don B. Richwine (Designee)	Commonwealth of Virginia
Edgar N. Henry	State of West Virginia
Robert E. Quilliam	Department of Agriculture
Erwin C. Hannum	Department of Health, Education and Welfare
Fred Wampler	Department of Interior
Philip E. Franklin	Department of Transportation
Reed A. Elliot	Tennessee Valley Authority
Clarence L. Fishburne, Jr.	Federal Power Commission

Designated Alternates attending, but not always sitting at the Committee table were:

Colonel Joseph L. Tucker	Commonwealth of Kentucky
Donald F. Carson (Designee)	State of New York
John H. Murdoch	Commonwealth of Pennsylvania
Lewis E. Hendricks	State of South Carolina
Raleigh Robinson	State of Tennessee
James S. Matthews	Department of the Army
Norris R. Caryl	Department of Agriculture
Telford G. Swennes	Federal Power Commission

Total attendance was 133.

b. Purpose. The meeting was held to review status of planning and to provide for coordination of final (comprehensive) planning and report production. State planning was emphasized.

c. Program. The Director welcomed the Mississippi representative to the Committee. He thanked the Committee members and cooperating offices' staffs for their part in creating a "wonderful relationship and spirit of cooperation." He discussed the possibility of having partial Committee meetings during the Spring of 1968 if planning problems in specific areas resulted in such a need.

John D. Whisman, States' ARC Regional Representative, discussed the history of the Appalachian Regional Program. He commended the group on the fine work they had done. He pointed out the important role that the Water Resource Study, the first study to be completed, would play in the overall regional plan.

Colonel T. G. Harton reviewed North Carolina's interest in water resource management. He outlined the proposed state supplement to the Water Sub-Regional D Report.* James L. Aull discussed the recently formed Water Resource Committee and the South Carolina agencies who were contributing to the supplement to Water Sub-Region D Report.* Joe P. Walters outlined the expected growth patterns in Appalachian Georgia. He discussed the supplement to cover parts of Water Sub-Regions D, E and J.*

Colonel R. C. Stephany of Alabama discussed a plan to use the talents of men of several agencies in a statewide water resource plan. Mr. G. Thompson Pound discussed briefly the successful efforts to get Appalachian Mississippi included in the study. Tom Herrin, of the Mississippi Research and Development Center, spoke on water resource planning and listed specific river basin developmental planning in Mississippi.

Kenneth A. Ackley, Director of Tennessee State Planning Division, discussed departmental reorganization in Tennessee and the supplement to Water Sub-Region I and J Reports.* Colonel J. A. Thetford outlined a five-year water resources survey for Kentucky. He discussed the state supplement to reports of Water Sub-Regions G, H and I.* Mr. D. B. Richwine discussed an eight-year plan for completing studies on the six Virginia river basins. The parts of the Tennessee and Big Sandy Basins in Virginia are all in Appalachia and the James River Basin partially in Appalachia. Work was almost finished on the Upper New River Basin plan.

Edgar N. Henry outlined goals in West Virginia for water and related resource development. He listed the basic problems to be solved. Herbert M. Sachs discussed his efforts to meet report schedules which differed with plans to prepare a master water supply and sewage plan for Maryland. Colonel C. T. Foust pointed out difficulties in preparing state inputs for the many water related studies being conducted in Ohio.

Alan J. Sommerville discussed coordination of planning efforts in Pennsylvania. The Pennsylvania Planning Board was preparing the supplement to Water Sub-Region A, B and F Reports.* F. W. Montanari outlined the many water resource surveys in progress in New York. His office was preparing a supplement to reports on Water Sub-Regions B and F.*

*/ It is to be noted that a later editorial decision was made to publish the State Supplements in a separate part of the Main Report rather than attaching them to a specific Sub-Regional Plan.

AD-A041 399

CORPS OF ENGINEERS CINCINNATI OHIO
DEVELOPMENT OF WATER RESOURCES IN APPALACHIA. MAIN REPORT. PART--ETC(U)
JUN 70

F/G 8/6

UNCLASSIFIED

2 OF 7
AD
A041 399

NL



J. S. Matthews, Study Coordinator, listed the efforts of APS to coordinate the study. He noted the good working relationship among the cooperating staffs. Mr. Whisman summarized the States' reports and suggested the need for continuing the Office of Appalachian Studies. Later, the state members met in private and adopted a resolution asking APS be continued to assist in implementing the Study recommendations.

Clarence L. Fishburne, Jr., discussed the role of the Federal Power Commission in the Study. He stated that existent and needed electric supply networks would be shown in the Main Report, Appendix B, Power Supply.

Fred Wampler reviewed the work schedules of Interior agencies and the challenge to meet them. Mr. G. G. Wyrick of USGS discussed the completed Appendix H, Ground Water. Mr. K. O. Schwab reviewed findings to be included in the Appendix D, Water Supply and Pollution Control, being prepared by the Federal Water Pollution Control Administration. Mr. R. G. Oberst of the Bureau of Sport Fisheries and Wildlife reported that Appendix G, Fish and Wildlife, was three-fourths drafted. Mr. H. H. Wilkerson of the Bureau of Outdoor Recreation discussed Appendix F, Recreation and Aesthetics; it was 40 percent complete. Mr. Stanley Feitler discussed the preparation of Appendix I, Mineral Industry, by the Bureau of Mines.

Robert E. Quilliam reported that U. S. Dept. of Agriculture planning was on schedule. Appalachian evaluation procedures had been followed in 91 of the 95 SCS watersheds studied (of the 100 total). Mr. N. R. Caryl stated that a preliminary draft of Appendix A, Agriculture, Forestry and Conservation, was being reviewed within the Department. He reviewed the contents.

R. W. Harrison of APS discussed research being conducted by Spindletop Research Inc. of Kentucky to develop a total impact evaluation system for water resource programs and to determine the best investment sequence in development programs. Dr. Richard Howes, Economic Consultant, discussed his system of impact measurements and the use of an input-output economic model in such evaluations. Robert Brewer, Engineer with Business and Defense Services Administration of the Dept. of Commerce, reviewed survey findings on water-using industries in Appalachia. All of the research mentioned above was contracted by APS.

F. O. Swiggart, APS, discussed the need for informing the public of the study results. It was decided that such meetings should be directed toward informing responsible officials first. The states would take the lead at the meetings.

G. H. Von Gunten of the Corps Ohio River Comprehensive Basin Survey Office, pointed out the need for using their study for guidance in Appalachian water resource planning.

Mr. A. C. Winters discussed changes in title and scope of some of the report appendices being prepared by the APS staff. J. D. Auburg, APS Economist, summarized Appendix E, Economic Base Study. He said that it would contain Developmental Benchmarks for Appalachian economic growth. John Clare, APS Hydraulic Engineer, stated that an Appendix on Hydrology would be reviewed during December and distributed soon after.

A report writing workshop was held after the meeting adjourned.

d. Results and Conclusions. The meeting served as an opportunity for cooperating offices to determine the relative status of their work. It appeared that production was generally somewhat behind schedule. The need for a continuing office to coordinate the work of carrying out the plan was established by the state members of the Committee.

10. EIGHTH MEETING OF WDCCA - CINCINNATI, OHIO, 8 MAY 1968.

a. Attendees. Primary, Alternate and Designated members present were:

Colonel John C. H. Lee, Jr., Chairman	Department of the Army
Dr. Monroe Newman	Appalachian Regional Commission
Colonel Robert C. Stephany (Alternate)	State of Alabama
Colonel J. L. Tucker	Commonwealth of Kentucky
Michael L. Rodevick (Designee)	State of Maryland
N. L. Barbarossa (Alternate)	State of New York
Dr. William C. Bell	State of North Carolina
Colonel C. T. Foust (Alternate)	State of Ohio
Alan J. Sommerville	Commonwealth of Pennsylvania
Don Duncan (Designee)	State of South Carolina
Don B. Richwine (Designee)	Commonwealth of Virginia
Colonel L. E. Spears	State of West Virginia
Robert E. Quilliam	Department of Agriculture
Erwin C. Hannum	Department of Commerce
G. H. Ferguson (Alternate)	Department of Health, Education and Welfare
Fred Wampler	Department of Interior
Philip E. Franklin	Department of Transportation
Reed A. Elliot	Tennessee Valley Authority
Clarence L. Fishburne, Jr.	Federal Power Commission

Designated Alternates attending, but not always sitting at the Committee table were:

Donald F. Carson (Designee)	State of New York
John H. Murdoch	Commonwealth of Pennsylvania
James S. Matthews	Department of the Army
Norris R. Caryl	Department of Agriculture

Total attendance was about 70. The meeting was in executive session and publicity was avoided.

b. Purpose. The meeting was held to revamp the final report to comply with requests that the report format be changed to facilitate use by the various states, and requests by the Appalachian Regional Commission that the report contain Sub-region plans in toto in one report element.

c. Program. The early meeting discussions were concerned with restructuring the report as recommended by people who had reviewed the drafts of report parts.

The recommendations had been analyzed by APS staff. It appeared to them that the new document should contain seven parts plus appendices. They were: Part I - The Summary Report, Part II, Potential to 1980, Part III - Shaping A Plan, Part IV - Project Analyses, Part V - Concepts and Methods, Part VI - State Water Supplements, Part VII - History, Coordination and Cooperation, plus nine appendices. It was recommended that the previously planned appendices on Planning, Benefits, Allocation and Apportionment, Transportation, Hydrology, Cost, and Economics be incorporated into the seven report parts; Mine Drainage . . . and Economic Base Study would remain as appendices. The ten Sub-region reports would become Parts II and III. The History . . . Appendix would become Part VII. The project discussions called "Project Packages" would become Part IV.

An animated discussion ensued with each WDCCA Member giving the judgment of his agency. Each one felt that the new report structure would result in a more understandable and useful document. Suggestions for inclusions in the report "Parts" were noted. The consensus of the Committee was that recommended Parts II and III became Part II with two chapters per Sub-region. Concepts and Methods became Part IV; and the State Water Supplements and History . . . became Parts V and VI. All other recommendations were accepted.

F. O. Swiggart led the APS staff in the discussions; Colonel Lee coordinated the Federal agency comments and J. S. Matthews coordinated the States' recommendations.

There was a discussion of the report schedule. It was agreed that the APS staff would reaggregate information into the new outlines and coordinate with the Committee Members so that the report could be completed at the earliest possible date.

d. Results and Conclusions. The meeting was a forum for those who felt that the plan and report were not fulfilling the requirements of the region. The restructuring of the report as agreed would undoubtedly increase both its scope and its value to those who would carry out the plan. The plan restructuring, of course, resulted in a lengthened planning period.

11. NINTH (FINAL) MEETING OF WDCCA - CINCINNATI, OHIO, 3-5
SEPTEMBER 1969.

a. Attendees. Primary, Alternate and Designated members present at the Committee table were:

Colonel John C. H. Lee, Jr., Chairman	Department of the Army
Don Crane	Appalachian Regional Commission
Dee E. Worrell (Alternate)	State of Alabama
Colonel Byron M. Kirkpatrick, (Ret.) (Alternate)	State of Georgia
Jewell Graham	Commonwealth of Kentucky
Clifford Cookin (Designee)	State of Mississippi
F. W. Montanari	State of New York
Dr. William C. Bell	State of North Carolina
Colonel C. T. Foust (Ret.) (Alternate)	State of Ohio
Alan J. Sommerville	Commonwealth of Pennsylvania
Clair P. Guess, Jr.	State of South Carolina
David P. Eberling (Designee)	State of Tennessee
Julian Alexander	Commonwealth of Virginia
Edgar N. Henry	State of West Virginia
Robert E. Quilliam	Department of Agriculture
Fred Wampler	Department of Interior
Glenn O'Neal (Designee)	Tennessee Valley Authority
Clarence L. Fishburne, Jr.	Federal Power Commission

Designated Alternates attending, but not always sitting at the Committee table were:

Stephen M. Thrasher	Commonwealth of Kentucky
James C. Byram	State of Mississippi
Jack Finck (Designee)	State of New York
Colonel T. Harton (Ret.)	State of North Carolina
John H. Murdoch	Commonwealth of Pennsylvania
James L. Aull (Designee)	State of South Carolina
James S. Matthews	Department of the Army
Norris R. Caryl	Department of Agriculture

Total maximum attendance was about 100. Again, the meeting was in executive session and publicity was avoided.

b. Purpose. The meeting was held to review, revise and accept drafts of the Final Report. An exchange of correspondence between ARC and APS, later circulated to the WDCCA and cooperating offices, had highlighted the criticality of the meeting.

c. Program. The Chairman noted that the scheduled date for completing the report was near and that funds for the Office of Appalachian Studies were almost gone. He asked that each of the Committee members, and support group, do everything possible to complete the report during or shortly following the three-day meeting. It was explained that the meeting had been set-up around a report center or hub, to which 13 work groups, or spokes, were to feed plan, project, and report element revisions.

These work groups were to resolve issues primarily uncovered in finalizing all the report components except Part I (Summary Report). Concurrently, the report center or hub was to use the feedback to finalize Part I.

There had been a meeting of the states' representatives the previous night. The meeting had been held to determine the opinion of the states on the report as a whole. John D. Whisman, States' Regional Representative, ARC, reported the meeting results. The states' had adopted the following four recommendations: (1) review period longer than the three days proposed might be required for final coordination; (2) that the Appalachian Regional Commission handle future report improvements; (3) that there be continuing consideration of possible needed policy changes; and (4) that the effort be continued, possibly through the ARC.

Don Crane of ARC recommended that program priorities be more specific; that the report emphasize a broad range of water resource needs; and that there be studies (later) to recommend priorities for funding of water resource projects in competition with, or in conjunction with, other functions.

R. E. Quilliam of the U.S. Department of Agriculture stated that they would do their best to meet the schedule.

Fred Wampler of U.S. Department of the Interior commended the group and pointed out specific projects that USDI might not be able to support as planned -- especially the Logan Multiple Purpose Reservoir in Ohio, (Hocking River). He also thought that more review time might be needed.

Roger Matson of the Tennessee Valley Authority felt that he and Glenn O'Neal could complete their work. Clarence Fishburne of the Federal Power Commission said that he could meet the schedule also.

The State Representatives of each of the states, except those of Ohio and Pennsylvania, believed that they could meet time schedules. Colonel C. T. Foust stated that the Logan Project was an essential element of Ohio's State Plan and that it must be a report project. A. J. Sommerville said that they would like to have Pennsylvania projects presented in the Plan with the priorities assigned by the state without consideration of existing authorities, state or federal. Then fund availability, from whatever source, would be a later consideration.

There followed a period of intensive effort in the work groups sessions. Special progress reports were given by the group leaders Thursday and Friday mornings. By Thursday morning an unprecedented amount of work had been accomplished but there still remained much to be done. It appeared that differences were being resolved. The states' members decided to hold a session that night to formulate an outline for their general views to be included in Chapter 9 of Part I.

Friday morning, John Souder, Mr. Whisman's assistant, reviewed the "states views" outline for Chapter 9, Part I. It included sections for a Summary of Comments on the four points of Mr. Whisman's 3 September report, and set 22 September as the deadline for ARC to receive individual comments.

It was apparent from the other progress reports Friday morning that the "impossible" had been accomplished. All of the major conflicts had been resolved. Arrangements were made to have the wrap-up comments to APS in ten days. The states' members agreed that a thorough plan review had been accomplished.

J. S. Matthews, APS Study Coordinator thanked the Committee members for their good will and cooperation during the study. Colonel John C. H. Lee, Jr., thanked the entire group for their help in finalizing the Report.

(Comments and recommendations were received as promised and the report was ready for **final editing and printing by October.**)

d. Results and Conclusions. The meeting proved that the restructuring of the report had been a wise move. It also demonstrated that men of skill and good will can resolve differences in a workshop situation. The meeting procedure resulted in an improved report that met the needs of the diverse cooperating groups and a plan and report which will meet the needs of Appalachia.

Preceding Page BLANK - NOT FILMED

EXHIBIT 1

1. APPALACHIAN REGIONAL DEVELOPMENT ACT OF 1965 - PL 89-4 (partial)

The Appalachian Regional Development Act of 1965, Public Law 89-4, was passed during the first session of the 89th Congress on March 9, 1965.

In writing the Act, Congress recognized the comprehensive report of the President's Appalachian Regional Commission. The report had included information that the region lagged behind other areas in economic growth; so far, in fact, that the people had not and could not properly share in the national prosperity. The area had abundant natural resources but its people relied too much on a 'few basic industries and a marginal agriculture' for their income.

The Act (program) was intended as a vehicle for the general improvement of the region through joint Federal and State efforts. The public investments were to be 'concentrated in areas where there is significant potential for future growth, and where the expected return on public dollars invested will be the greatest'. The goal was, and is, a self-supporting, strengthened free enterprise economy.

a. Title I. Title I established the Appalachian Regional Commission. It is composed of the Governor, or his designee, of each of the thirteen States (with the addition of Mississippi in 1967). One of the states' members is elected Cochairman each half-year. The Federal Cochairman is appointed by the President. Each of the members has an alternate. The State members (Governors) early established the job of State's Regional Representative to work on an equal basis with the Federal Cochairman at Commission headquarters.

b. Titles II and III. Programs authorized by Title II and Title III of the Appalachian Regional Development Act of 1965 are as follows:

Under Section 201 an Appalachian development highway system to open up areas with a development potential where growth has been inhibited by lack of adequate access.

Under Section 201 local access roads to open up specific industrial, commercial, residential, or recreational areas for development, or to facilitate school consolidation.

Under Section 202 a comprehensive health demonstration program to demonstrate the value of adequate health facilities and services to the economic development of the Region.

Under Section 203 a land stabilization, conservation and erosion control program to provide erosion and sediment control, land stabilization and land reclamation.

Under Section 204 a timber development program to provide technical assistance in the organization and operation of private timber development organizations.

Under Section 205 a mining area restoration program designed to rehabilitate areas with a development potential damaged by past mining practices.

A comprehensive water resources study is authorized for the entire Appalachian region in Section 206.

Under Section 211 a vocational education program to accelerate the construction of vocational and technical education facilities.

Under Section 212 a water pollution control program to accelerate construction of facilities to prevent or abate pollution in the Region's streams.

Under Section 214 a supplemental grant program to assist Appalachian applicants to participate in regular Federal grant-in-aid programs.

Under Section 301 assistance to local development districts to help encourage local bootstrap efforts and area development. Research and demonstrations designed to find ways to enhance the Region's productivity.

c. Title IV. Title IV of the Act included a definition of the Appalachian Region. Included were 360 counties in Alabama, Georgia, Kentucky, Maryland, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia and West Virginia. Provision was made for a study which resulted in the inclusion of thirteen New York counties. (Twenty-four counties were added in 1967; one each in New York and Tennessee, two in Alabama and 20 in Mississippi. The new total is 397 counties.)

The legislative duration of the program was first set to end on July 1, 1971, but the highway program under Section 201 has already been extended through FY 73.

d. Provision for Changes by the Act in Federal Acts or Programs. The Act provided for changes in the following Federal Acts or programs to improve their coordination and effectiveness within the Appalachian Region:

(1) Funds under title 23, United States Code, for Federal-aid primary highways were made available for Appalachian Development Highways.

(2) Rules, but not funds, for construction grants under Title VI of the Public Health Service Act and the Mental Retardation Facilities and Community Mental Health Centers Construction Act of 1963 apply to Appalachian Demonstration health facilities.

(3) The Secretary of Agriculture was directed to work through his agencies and authorities to accelerate soil and water conservation activities and timber development in Appalachia (including Farmers Home Administration loan programs).

(4) The Secretary of the Interior was directed to administer ARC funds for accelerating work under mine area reclamation and mine fire extinguishing programs, and fish and wildlife restoration projects.

(5) The Secretary of Health, Education, and Welfare was directed to make ARC funded grants in accordance with provisions of the Vocational Education Act of 1963 and the Federal Water Pollution Control Act (now administered by Department of the Interior - Federal Water Pollution Control Administration - 1966) for school and sewage plants.

(6) Under the Section 206 Water Resource Survey the Secretary of Army and other Federal agencies were given special contractual authority to seek assistance in expediting the plan preparation.

(7) The Secretary of Commerce was directed to allocate grant-in-aid funds for recommended projects to the Federal entities administering programs (land and construction) under the following Acts (partial list):

Federal Water Pollution Control Act; Watershed Protection and Flood Prevention Act; Title VI of the Public Health Service Act; Vocational Education Act of 1963; Library Services Act; Federal Airport Act; Part IV of the Title III of the Communications Act of 1934; Higher Education Facilities Act of 1963; Land and Water Conservation Fund Act of 1965; National Defense Education Act of 1958. The development highway system provisions, including appropriations, was provided for in Section 201.

(Specific agency authorities are discussed throughout this and other elements of the Report. All Federal agencies have functioned within existing program criteria, since the Appalachian Regional Development Act provided for no criteria revisions. The Act did, however, stipulate that public investments should be in an area having a significant potential for growth and should result in a continuing economic betterment. Methods for quantifying such "expansion benefits" are discussed in Appendices A and E.)

EXHIBIT 2

REVISIONS OF THE ACT AND ASSOCIATED PROGRAMS AND ACTIONS

1. Appalachian Regional Development Act - 1967 Amendments. During the 1968 fiscal year, Congress extended and revised the Appalachian Regional Development Act of 1965. The new Act, signed by President Johnson in October 1967, increased the authorized funds for the Appalachian Development Highway System and extended the authorization of funds for non-highway programs for another two-year period, from 1967 to 1969.

Twenty counties in Mississippi were added to the Regional program, bringing the total number of participating States to thirteen.

The major amendments to the Act were the following:

An increase in highway authorizations to permit construction of two Appalachian Development Highway Corridors in New York and Pennsylvania and additional local access roads. Authority was given for the States to "pre-finance" Appalachian highways with their own funds before they received Federal funds in order to accelerate construction of the development highway system.

Establishment of an Appalachian Housing Fund (Section 207) to help stimulate the construction of badly needed low- and moderate-income housing.

Revised authority under the Appalachian Demonstration Health Program to permit assistance for defraying costs for health services, operations, and health manpower training.

An increased authorization for building and equipping new vocational and technical training facilities.

Authority for Appalachian assistance to eliminate surface wastes from coal mining. States may also count the cost of acquiring land for mine area reclamation toward their matching part of the costs of such projects.

Direct appropriation of Appalachian funds to the President.

A major mine drainage pollution study was directed.

In addition to changes in the Act, President Johnson on December 29, 1967 issued an executive order which directed the Secretary of Commerce to accept the President's responsibility for coordination of the work of the Appalachian Regional Commission with Federal agencies. This directive resulted in the Secretary's responsibility for such liaison for all six regional economic development commissions.

The order replaced the Federal Development Committee for Appalachia with a Federal Advisory Council on Regional Economic Development.

Each Federal department was directed to appoint an Assistant Secretary for regional economic development.

2. Most of the changes in programs of Federal agencies resulting from the Appalachian Regional Development Act were directed by the Congress in the Act. In addition, the "Act" has been noted or considered in almost every conservation or development measure before the Congress since 1965. This is especially true of measures concerning the Appalachian Region. There is little doubt that what amounts to a "reorganization" of the Department of Commerce has been brought about largely by the Appalachian Act and the Public Works and Economic Development Act of 1965 (PL 89-136).

3. Public Works and Economic Development Act of 1965. The Public Works and Economic Development Act of 1965 provided grants and loans for public works and development facilities which "tend to improve the opportunities" in the area through commercial plant establishment or expansion to benefit the long-term unemployed and low-income groups. This Act provided for grants, or supplementary grants, and water supply systems. (In application the program has provided funds for recreation and water quality control improvements and many other water-related developments through the supplementary grants provisions - similar to Section 214 of the Appalachian Act.)

The provisions of this Act were similar to those of the Appalachian Act except that Local Development Districts were called Economic Development Districts and that the Secretary of Commerce was directed to appoint a twenty-five member National Public Advisory Committee on Regional Development in lieu of the Federal Development for Appalachia selected by the President.

The Appalachian Region was specifically excluded from this Act, however, in view of the President's executive order of December 29, 1967, which required coordination with the Department of Commerce, its provisions become most significant.

4. Title III, Water Resource Planning Act of 1965. Title III of the Water Resource Planning Act of 1965 (PL 89-80) provides for Federal grants to States to assist them in developing and participating in the development of comprehensive water and related resource plans. States submit to the Water Resources Council a proposed comprehensive planning program, and the Council is directed to approve the program if it meets certain criteria set forth in the Act. The Council can provide funds on a matching basis for carrying out the programs. (All 13 of the States in Appalachia have received such grants. Planning programs of the States and parts of the ARC-funded State Development Plans are important parts of the Water Resource Plan.)

5. Formation of New Federal Agencies or Departments. Administrative changes have resulted from the formation of the Department of Transportation which absorbed the Bureau of Public Roads (from Department of Commerce); the formation of the Department of Housing and Urban Development, which absorbed the Federal Housing agencies (from Department of Health, Education and Welfare and Housing and Home Finance Administration); and the formation and shifting of the Federal Water Pollution Control Administration from Department of Health, Education, and Welfare to the Department of the Interior.

*NOT
Preceding Page BLANK - FILMED*



DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
WASHINGTON, D.C. 20315

IN REPLY REFER TO
ENGCW-PE

1 July 1965

SUBJECT: Special Guidance for Appalachian Studies

TO: Division Engineer
U. S. Army Engineer Division, Ohio River

1. The 10 March 1965 letter, subject as above, outlined tentative basic concepts for the conduct of the Appalachian Water Resources Survey and solicited your views thereon. After careful appraisal of your comments and further consideration of the concepts outlined earlier, I am now outlining these concepts to be applied in program and project development for the Appalachian region. You should fully acquaint yourselves with these concepts as well as the philosophy and basic economic principles underlying them. As the study progresses and the objectives for economic development for the Appalachian region are better articulated, it may be necessary to modify the concepts outlined herein. Also as improved techniques are developed for the identification and measurement of the effects of water resource improvements on economic growth, guidance in these matters will be provided.

2. Background. The purpose of the Appalachian Regional Development Act of 1965 (Public Law 89-4) is contained in Section 2 which states in part:

"....the purpose of this Act (is) to assist the region in meeting its special problems, to promote its economic development and to establish a framework for joint Federal and State efforts towards providing the basic facilities essential to its growth and attacking its common problems and meeting its common needs on a coordinated and concerted regional basis."

The legislation further provides in Section 206(a) that:

"The Secretary of the Army is hereby authorized and directed to prepare a comprehensive plan for the development and efficient utilization of the water and related resources of the Appalachian region, giving special attention to the need for an increase in the production of economic goods and services within the region as a means of expanding economic opportunities and thus enhancing the welfare of its people which plan shall constitute an integral and harmonious component of the regional economic development program authorized by the Act." (underline added).

Page 1 of 32
Exhibit No. 3

3. Legislative intent. The legislative intent of the Act is that attainment of reasonable economic and social development goals in the Appalachian region be an integral part of national economic policy. A more full understanding of intent should be gained by reviewing Senate Report No. 13 and House Report No. 51, 1st Session, 89th Congress, dated 27 January and 17 February 1965, respectively. The primary objective of the economic development program for Appalachia, including the further development and utilization of its water and related land resources, is to create an economic and social environment such that Appalachia may become capable of self-sustaining growth and thereafter more fully share in the anticipated growth of the national economy. In conducting the survey required by Section 206(a) of the Act, regional growth objectives are to be reflected in our standards and procedures for program and project formulation, in the economic evaluation and justification of projects, in the allocation of costs, and in cost-sharing arrangements.

4. Federal responsibility in water resources development for Appalachia. Reference is made to ER 1165-2-1 which presents a synopsis of the basic principles and policies embodied in existing laws which define the Federal role in water and related resource development. Particular attention is directed to paragraph 6 thereof which defines the Federal responsibility for comprehensive development. Two major concepts developed therein are of significant import to the preparation of the Water Resources Survey for Appalachia:

a. Federal planning of water resources should be comprehensive in scope and consider all aspects and solutions of water and related land resources development problems. From the planning standpoint, the Water Resources Survey must produce a comprehensive plan including all relevant proposals regardless of the responsibility for construction, financing, or operation and maintenance of any element thereof. In other words, the formulation should proceed on an objective basis without regard to the assignment of responsibility for their provision.

b. Federal responsibility for the provision and development of any element of a comprehensive plan for Appalachia in accordance with the planning approach outlined above should be guided by the concepts presented in paragraph 6b of the referenced ER, cited below:

"....projects involving only functions that are normally local responsibilities may be recommended as Federal undertakings when the scope of service rendered, the magnitude, or other important considerations, clearly identify them as beyond the authority or competence of non-Federal entities.it must be kept in mind that Federal responsibility in planning does not automatically establish a justification for Federal participation in construction or financing, and

that Federal legislation recognizes a high degree of local responsibility for the solution of local problems....."

5. Regional objectives. The Presidential policies, standards, and procedures stated in Senate Document No. 97, 87th Congress, provide the basis for the consideration of regional objectives in the preparation of plans and programs for water and related resources development. Specifically these are contained in paragraphs III-Al,2, and 3; V-A3; V-A8; V-B1 and 2 of that document. Particular attention is directed to paragraph III-Al which states in part that:

"All viewpoints - national, regional, State and local - shall be fully considered and taken into account in planning resource use and development. Regional, State and local objectives shall be considered and evaluated within a framework of national public objectives...."

Although these objectives provide for consideration of the well-being of all the people, taking into account hardships and basic needs of particular groups, major emphasis has heretofore been given to the realization of the greatest possible net contribution to national welfare. This is achieved when programs and projects are designed to maximize net benefits measured from a national viewpoint. Formulation of a water resources plan for Appalachia where regional economic stimulation is a major program objective will require an extension of the current approach to embrace more fully the relevant regional considerations.

6. Economic development. Assessment of regional and local demands for water resource goods and services will be predicated upon realization of economically feasible water resource developments that, together with other programs for providing basic public facilities, will act as "inducers" of both regional and national economic change. These assessments will give consideration to additional demands for goods and services that would result from other actions under the Appalachian program. The full impact of public investments in stimulating all forms of economic growth, regional and national, will be evaluated in the determination of the projected demands to be met. The objective for program and project formulation to meet these demands will be to maximize net economic development benefits.

7. Benefit evaluation. In the formulation and evaluation of programs and projects, monetary equivalents will be developed for all regional and local developmental costs and benefits separate from and in addition to the costs and benefits evaluated under national efficiency criteria. The pertinent classes of benefits are as follows:

a. Primary benefits. The net increase in the value of goods and services which directly result from the project under conditions expected with the project as compared with those without the project, less associated costs incurred in the realization of the benefits and any induced costs not

ENGCW-PE

SUBJECT: Special Guidance for Appalachian Studies

included in project costs. Such primary benefits will be considered attributable to Appalachian development both from the national and regional viewpoint.

b. Secondary benefits. The net increase in the value of goods and services which indirectly result from the project under conditions expected with the project as compared to those without the project. Such increase shall be net of any economic non-project costs that need be incurred to realize these secondary benefits and shall be measured on two bases:

- (1) National viewpoint. Considered attributable to Appalachian development from a national viewpoint. Generally these will also be secondary benefits from the regional viewpoint as well.
- (2) Regional viewpoint. Considered attributable to Appalachian development from a regional or local viewpoint, but not necessarily from a national viewpoint.

8. Identification of secondary benefits. Insofar as secondary benefits defined above are likely to be critical both in the formulation and justification of projects for Appalachia, particular care will be exercised in their identification and measurement. As a guide to their identification there is presented below a general rationale establishing the conditions that must be present in the area affected by the project to provide a sufficient basis for crediting projects with secondary benefits.

a. Identification rationale. A basic assumption of benefit-cost analysis is that water resources development planning is made within a context of general economic stability and continued economic growth. While this is appropriate when viewed from the broad, national public viewpoint, it does not preclude the recognition that there are regions and areas such as Appalachia where such an assumption cannot be applied without modification. The broad assumption from the national viewpoint generally accepts that over the long run all economic resources will remain mobile and that factors of production will be put to use in those locations where their returns will be the greatest. For regions such as Appalachia, factors of production have not been mobile in the past several decades as evidenced by sustained higher than average unemployment rates and under-employment of capital resources. Since this premise of mobility is in particular not fully applicable to Appalachia, it is unlikely that, in the absence of development investments, such resources would be put into useful production in other locations. It follows then that given public development investments within Appalachia it is likely that these factors of production can be put to a useful purpose and that the output in goods and services from a project may create secondary benefits in the form of processing opportunities and earning possibilities from resources that would otherwise be idle. However, water and related land resources

ENGCW-PE

SUBJECT: Special Guidance for Appalachian Studies

development alone may not be sufficient to bring the immobile resources into productive pursuits. There may have to be other types of investments in public facilities and in capital goods which, when combined with water resources investments, will bring the idle resources into production. If investments in combination are required to induce self-sustaining production the net benefits must be apportioned among the investment programs.

b. Relationship between national and regional secondary benefits. The rationale developed in paragraph 8a for the identification of secondary benefits can be considered applicable to the national and regional viewpoints to the extent that the new opportunities for productive activities for otherwise idle resources created by the water resources developments and other Appalachian programs do not represent a diversion of current activity from some other part of the country. Evidence of this situation must be presented to support crediting of projects with national secondary benefits. Where such effects, however, cannot be considered as net to the nation, but do nonetheless occur within the region, they may be classed as regional secondary benefits as defined above in paragraph 7b(2).

c. Developing tools for identification and measurement. Identifying and measuring both national and regional secondary benefits described above will necessitate the development of new tools for planning to assess the impacts of water resources investments on regional and national economic growth. A substantial amount of the needed research is presently under contract with the University of Pittsburgh and North Carolina State College. As this research progresses and as meaningful interim conclusions are available prior to the completion of the research, these will be made available for application in the Appalachian study.

9. Standard for formulation. Projects in Appalachia will be formulated in accordance with the project formulation standards described in paragraph V-C2 of Senate Document No. 97. Net benefits in project formulation will consist of the sum of all benefits defined in paragraph 7 above (7a + 7b(1) + 7b(2)). Project formulation will further be guided by the following sections of the Appalachian Regional Development Act of 1965:

a. Section 2 - "The public investments made in the region under this Act shall be concentrated in areas where there is a significant potential for future growth, and where the expected return on public dollars invested will be the greatest."

b. Section 224(b) - "No financial assistance shall be authorized under this Act to be used (1) in relocating any establishment or establishments from one area to another; (2) to finance the cost of industrial plants, commercial facilities, machinery, working

capital, or other industrial facilities or to enable plant subcontractors to undertake work theretofore performed in another area by other subcontractors or contractors; (3) to finance the cost of facilities for the generation, transmission, or distribution of electric energy; or (4) to finance the cost of facilities for the production, transmission, or distribution of gas (natural, manufactured or mixed)."

10. Redevelopment effects. A water resource project may give rise to the employment of workers, who would remain unemployed or under-employed in the absence of the project, both directly in the construction, operation, and maintenance of the project and indirectly in activities stemming from the use of project goods and services. The creation of new employment opportunities will be considered a project purpose and will be designated "area redevelopment". Area redevelopment benefits will be measured by the additional wages and salaries of the workers who would be unemployed or under-employed in the absence of the project. These benefits will be evaluated in project formulation and justification and will enter into cost allocation and cost-sharing. The engineering design of a project or the most efficient method of construction should not be altered, however, in order to increase the labor component. Costs will be allocated by the Separable Costs-Remaining Benefits method. Cost allocable to area redevelopment will be limited by the area redevelopment benefits since the alternative cost of providing equivalent benefits by non-project means would, presumably, at least equal the benefits. Also, the cost of the alternative N-1 project used in deriving the separable cost for each purpose, other than area redevelopment, must be sufficient to assure that the area redevelopment benefits in the N-1 project will be equivalent to the area redevelopment benefits for the multiple-purpose project. Thus, for example, if the area redevelopment benefits total \$100,000 for the multiple-purpose project but only \$50,000 for the N-1 project, sufficient additional costs must be included in the N-1 project to make up the \$50,000 deficiency in redevelopment benefits. In the usual case this will require \$50,000 in additional costs on the basic assumption that the cost of providing redevelopment effects by alternative means would at least equal the benefits. The procedure for adjusting the cost of the N-1 project and for computing the separable costs is illustrated in Attachment 1.

11. Project justification. As provided for in paragraph V-A8 of Senate Document No. 97, where secondary benefits are included in the formulation and evaluation of a project proposal two benefit-cost ratios will be shown. The first will include all benefits (national and regional) (7a+7b(1)+7b(2) applied to total project economic costs. The second will include only benefit items, primary and secondary, attributable from the national viewpoint

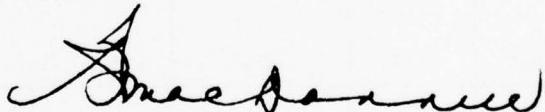
ENGCW-PE

SUBJECT: Special Guidance for Appalachian Studies

(7a+ 7b(1)) applied to total project economic costs. Favorable project recommendations will be based generally upon demonstration that both benefit-cost ratios are favorable. Reporting officers may recommend projects for favorable consideration where the benefit-cost ratio from the national viewpoint is less than unity if such project would, in the judgment of the reporting officer, further the objectives of the Appalachian legislation by permitting the accrual of benefits and effects from the project not susceptible of monetary evaluation. As the study progresses and such projects are identified they should be brought to the attention of this office for further consideration in light of current policy and further articulation and specification of economic development objectives for Appalachia.

12. Allocation of costs. Allocation of costs to project purposes, as the basis for cost-sharing will take into account all project benefits and economic costs both national and regional. Secondary benefits, both national and regional, will be made part of the total benefits for the project purpose with which they are associated. Separate allocations to either national or regional secondary benefits will not be made.

13. Cost-sharing. The depressed state of economic development prevalent in many areas of Appalachia has eroded their fiscal base. Such areas are not in as favorable a position with respect to ability-to-pay as are more prosperous areas of the country. Implementation of major segments of an overall program for water resources development may fail unless this is recognized in approaching cost-sharing for projects in Appalachia. As one approach, consideration will be given to procedures that would permit local interests to furnish the normal items of local cooperation on an extended repayment basis. It is not considered that grants should be made for this purpose. However, this would not preclude local interests, if eligible, from taking advantage of other programs which are designed to subsidize local investments in public facilities.



1 Attachment as

R. G. MacDONELL
Major General, USA
Acting Chief of Engineers

Page 7 of 32
Exhibit No. 3

PROJECT "X"
SCRB COST ALLOCATION
(Redevelopment a Project Purpose)

<u>Redevelopment Benefits Not Needed For Economic Justification</u>						
	Flood Control	Power	Water Quality Control	Recreation	Redevelopment Benefits	Total
Benefits	2094.0	6503.0	2730.0	958.0	933.6	13212.6
Alternate Cost	2234.0	4024.0	2732.0	554.0	(1)	-
Limit	2094.0	4024.0	2730.0	554.0	933.6	10335.6
Separable Cost	194.2	2207.9	185.6	263.4	0	2851.1
Remain Benefits	1899.8	1816.1	2544.4	290.6	933.6	7484.5
Allocated Joint Costs	775.0	744.0	1044.9	119.0	382.0	3064.9
Total Allocated Cost	969.2	2951.9	1230.5	382.4	382.0	5916.0
Separable O & M	32.0	948.0	18.0	170.0	0	1168.0
Joint O & M	8.9	8.5	11.9	1.4	4.3	35.0
Total O & M	40.9	956.5	29.9	171.4	4.3	1203.0
Separable Replacement	4.0	92.0	1.0	27.0	0	124.0
Joint Replacement	1.8	1.7	2.4	1.3	.8	7.0
Total Replacement	5.8	93.7	3.4	27.3	.8	131.0
Annual Investment	922.5	1901.7	1197.2	183.7	376.9	4582.0

Note:

(1) Alternate Single Purpose project cost equals or exceeds the benefit value.

PROJECT "X"
Redevelopment Benefits Not Needed For Economic Justification

Column No.	Mult.Purp. Project	Mult.Purp. Proj. Less Flood Control	Mult.Purp. Proj. Less Power	Mult.Purp. Proj. Less Recreation	Mult.Purp. Proj. Less Water Quality	Mult.Purp. Proj. Less Development Ben.	Mult.Purp. Proj. Less Red.Ben.	Line No.	Notes
Prj.Csts.	Red.Ben.	Prj.Csts.	Red.Ben.	Prj.Csts.	Red.Ben.	Prj.Csts.	Red.Ben.		
1	2	3	4	5	6	7	8	9	10
Annual Charges Int. & Amort	4,581.9	818.6	4,382.5	785.4	2949.5	520.1	4456.8	791.9	4365.2
O & M Replacements	1203.0	115.0	1175.0	111	338.0	32.0	1049.0	99.0	1188.0
Total Annual Charge	131.0	0	127.0	0	39.0	0	104.0	0	130.0
Redevelopment Benefits	5915.9	5684.5	896.4	3326.5	552.1	5609.8	5683.2	886.5	" " "
Redevelopment Benefit Adj.N-1 Project		933.6		37.2	381.5		42.7	47.1	" " "
Adj. N-1 Project Costs			5721.7		3708.0		5652.5	5730.3	5915.9
Total M/P Project Costs		5915.9							See Line 4 Col.1
Separable Costs Separable O & M Costs		194.2	2207.9	263.4	185.6		0	0	Line 8-7
Red. Ben. Adj. for O & M		28.0	865.0	154.0	15.0				M/P proj. O & M less alt. proj. O & M Cost.
Adj. Separable O & M Costs Separable Replacement Costs		4.0	83.0	16.0	3.0		0	0	O & M red. ben. lost by deleting purpose.
		32.0	948.0	170.0	18.0		0	0	Lines 10 + 11
		4.0	92.0	27.0	1.0		0	0	M/P replacement cost less alt. pri.replace.cost
									13

PROJECT "Y"

SCRB METHOD OF COST ALLOCATION
(Redevelopment a Project Purpose)

Redevelopment Benefits Needed for Economic Justification					
	Flood Control	Recreation	Water Quality Control	Redevelopment Benefits	Total
Benefits	100.0	200.0	100.0	83.4	483.4
Alternate Costs	314.0	350.0	140.0	(1)	-
Limit	100.0	200.0	100.0	83.4	483.4
Separable Costs	69.0	52.3	18.9	0	140.2
Remain Benefits	31.0	147.7	81.1	83.4	343.2
Allocated Joint Costs	30.0	143.0	78.5	80.7	332.2
Total Allocated Costs	99.0	195.3	97.4	80.7	472.4
Separable O & M Costs	33.2	51.6	0	0	84.8
Allocated O&M Joint Costs	1.5	7.2	4.0	4.1	16.8
Total Allocated O & M Costs	34.7	58.8	4.0	4.1	101.6
Separable Replacement	1.8	6.1	0	0	7.9
Allocated Joint Replacement	0	0	0	0	0
Total Allocated Replacement Costs	1.8	6.1	0	0	7.9
Annual Investment	62.5	130.4	93.4	76.6	362.9

Note:

(1) Assumed to be equal to or greater than benefit value.

PROJECT "Y"
Redevelopment Benefits Needed For Economic Justification

Column No.	Mult.Purp Project	Mult.Purp Proj. Less Flood Control	Mult.Purp.Proj. Less Recreation	Mult.Purp.Proj. Less Water Quality	Mult.Purp.Proj. Less Redevelopment	Mult.Purp.Proj. Less Redevelopment	Line No.	Notes
Pr.L.Csts.	2	3	4	5	6	7	8	10
Prd.Ben.								
Annual Charges Int. & Amort	362.9	58.2	297.9	43.6	345.0	54.9	338.3	52.5 Same as Multiple Purpose Project
O & M Replacements	101.6	25.2	76.6	17.0	60.0	15.2	101.6	25.2 "
Total Annual Charge	7.9	0	6.1	0	1.8	0	7.9	0 "
Redevelopment Benefits	472.4		380.6		406.8		447.8	" "
Redevelopment Benefit Adj.N-1 Project			83.4		60.6		70.1	" "
Adj. N-1 Project Costs			22.8		13.3		5.7	0
Total M/P Project Costs								6 Loss in red.ben. by deleting a project purpose.
Separable Costs Separable O & M Costs			403.4		420.1		453.5	472.4
Red. Ben. Adj. for O & M								7 (Add Lines 4 & 6) Benefits of alt. now equals those in M/P project.
Adj. Separable O & M Costs Separable Replacement Costs			69.0	52.3	472.4	472.4	472.4	8 See Line 4, Column 1
			25.0	41.6				9 Line 8 minus Line 7
			8.2	10.0				10 M/P project O & M costs less O & M costs of alt. project.
								11 O & M red.ben.lost by deleting a purpose.
								12 Add Lines 10 & 11
								13 M/P project replacement costs less alt. project replacement costs.

Preceding Page BLANK - NOT FILMED



DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
WASHINGTON, D.C. 20315

IN REPLY REFER TO
ENGCW-PE

27 December 1965

SUBJECT: Special Guidance for Appalachian Studies (Supplementary)

TO: Division Engineer
Ohio River

1. The purpose of this letter is to provide supplementary guidance with respect to several matters which have come to the fore subsequent to issuance of the 1 July 1965 letter, same subject.

2. Application to recreation and fish and wildlife enhancement. The following adaptations will be made in the 1 July 1965 letter to accord with provisions of Public Law 89-72, 89th Congress:

a. Cost sharing. Section 2 (a) of Public Law 89-72, specifies that non-Federal public bodies shall bear not less than one-half of the "separable capital costs" and all of the costs of operation, maintenance, and replacement incurred in connection with the inclusion of recreation and fish and wildlife enhancement as purposes of the project. The law defines separable costs as "the difference between the capital cost of the entire multiple-purpose project and the capital cost of the project with the purpose omitted". The term "capital cost" in the context used is considered to have the same meaning as "construction or first cost" in Corps usage. In applying the guidance in the 1 July 1965 letter, the separable costs for recreation and fish and wildlife enhancement cost sharing determined in accordance with the provisions of Public Law 89-72 will not be adjusted for area redevelopment effects.

b. Cost allocation. In cost allocation studies for the purpose of allocating costs equitably to the several project purposes, the adjustment for area redevelopment effects will be applied uniformly to all purposes, including recreation, as set forth in the 1 July 1965 letter and the illustration inclosed therewith.

c. Determination of Federal interest. For the purpose of determining the Federal interest in a project pursuant to Section 9 of Public Law 89-72, use will be made of the costs allocated to the several purposes, adjusted for area redevelopment effects (b above).

ENGCW-PE

27 December 1965

SUBJECT: Special Guidance for Appalachian Studies (Supplementary)

3. Allocation of costs to hydro-power. This office has reviewed the provisions of the 1 July 1965 guidance letter with respect to the allocation of costs to hydro-power in view of the provision in Section 224 (b) of the Appalachian Regional Development Act of 1965 that "no financial assistance shall be authorized under this Act to be used(3) to finance the cost of facilities for the generation, transmission, or distribution of electric energy....". This office holds the view that this provision in the Appalachian Development Act does not relate to report recommendations of the Corps of Engineers which are submitted to Congress for authorization under the Civil Works program.

4. Application to authorized projects. The guidance set forth in the 1 July 1965 letter and herein is applicable to any authorized project up to the time of the first appropriation of construction funds. Prior notification will be given by letters from the Office of the Secretary of the Army, to the Bureau of the Budget, and the Public Works and Appropriations Committees of the Congress of the intention to modify any project by the inclusion therein of area redevelopment as a project purpose. These letters together with a covering Memorandum from this office to the Special Assistant to the Secretary of the Army for Civil Functions, setting forth the pertinent considerations will be prepared in draft by the appropriate field office and will make appropriate reference concerning the relationship of the project to the Appalachian program. (The format of the draft Memorandum and letters should be generally the same as that used in proposing the addition of water quality control as a purpose of an authorized project).

/s/R. G. MacDonnell
Major General, USA
Acting Chief of Engineers



DEPARTMENT OF THE ARMY
OFFICE OF APPALACHIAN STUDIES. CORPS OF ENGINEERS
P. O. BOX 1159
CINCINNATI, OHIO 45201

IN REPLY REFER TO

ORAEX

13 December 1966

SUBJECT: Engineering Studies for Water Resources
Development in Appalachia

TO: WDCCA Members (Primary and Alternate),
Action and Cooperating Offices

1. Inclosed, for your information and guidance, is copy of letter from Division Engineer, Ohio River Division, to the Chief of Engineers, Department of the Army, dated 31 October 1966, subject as above, and OCE 1st Indorsement thereto dated 6 December 1966.
2. Use of the procedures ("short-cuts") outlined in this correspondence by Corps offices will expedite the preparation of all field reports, helping to submit the Water Resource Survey Report on 1 July 1968.

1 Incl
Ltr ORD 31 Oct 66
with OCE 1st Ind

John C. H. Lee, Jr.
JOHN C. H. LEE, JR.
Colonel, Corps of Engineers
Director

Preceding Page BLANK - NOT FILMED



DEPARTMENT OF THE ARMY
OHIO RIVER DIVISION, CORPS OF ENGINEERS
P. O. BOX 1159, 550 MAIN STREET
CINCINNATI, OHIO 45201

IN REPLY REFER TO ORAED

31 October 1966

SUBJECT: Engineering Studies for Water Resources Development
in Appalachia

TO: Chief of Engineers
ATTN: ENGCW

1. In accordance with paragraphs 74 and 148 of the Plan of Survey, initial stage studies for water resources development in Appalachia began about 5 March 1966 and the first of the initial stage study reports were submitted about 1 September. Most districts had furnished their reports by 1 October, although some supplemental information is continuing to be received. It is expected that screening of these reports will be sufficiently advanced to permit the selection of preliminary plan for continued study by the end of calendar year 1966. However, development of screening and plan development studies will continue in the Office of Appalachian Studies for perhaps another month after that. In general, most of the districts can begin the detailed study stage of the investigation soon after the first of December 1966.

2. During the detailed study stage, efforts will be directed toward development of project cost estimates, estimates of benefits, and either project or sub-regional plan formulation studies. Those districts assigned responsibility for the preparation of sub-regional reports are expected to have their drafts completed by 1 December 1967. While these studies are in progress, a draft of the main body of the report and appendices will be prepared by the Office of Appalachian Studies and cooperating agencies. After the draft sub-regional reports are received, the final draft will be completed and be ready for field review about the middle of March 1968. As scheduled, the report will be submitted 1 July 1968, in order to permit the President to furnish the plan to the Congress with his recommendations not later than 31 December 1968, as provided in Section 206 of Public Law 89-4, the Appalachian Regional Development Act of 1965.

ORAED

31 October 1966

SUBJECT: Engineering Studies for Water Resources Development
in Appalachia

3. In order to complete the study within the schedule discussed above, it will be necessary to make maximum utilization of the engineering resources available. In order to accomplish this, it is proposed to short-cut the usual investigation procedures as described in the following sub-paragraphs.

a. Hydrology and Hydraulics. Previous studies and reports should be used to the fullest extent to extract such information as may be useful to the project at hand. This applies, particularly, to general climatological data such as temperature, rainfall, wind direction and velocity, seasonal variations of temperature and so forth. Streamflow information can be determined by relating the drainage area being studied to the nearest rated gage. If the area of concern is on an ungaged stream, then a comparison can be made to adjacent gaged streams; flow volumes can be adjusted by the ratio of the drainage areas. Flood peaks can be adjusted by the ratio of the square roots of the drainage areas. Slope-area computations should be used instead of backwater profiles to estimate the capacity of ungaged channels. Spillway design and standard project floods should be derived by use of the generalized estimates furnished by Hydrometeorological Section of the United States Weather Bureau.

b. Surveys and Mapping. Survey work should be limited to profiles along the axis of the dam and spillway, and to channel sections necessary to define the benefit reaches for economic study purposes. USGS $7\frac{1}{2}'$ quadrangle sheets will provide mapping of sufficient accuracy for survey report studies. The maps can be utilized for reservoir capacity and area determinations and for such flood plain studies as are required downstream of the project. In those instances where $7\frac{1}{2}'$ quadrangle maps are not available, either the 15' quadrangles or the 30' quadrangles may be used. Areas and volumes obtained from the 15' and 30' quad sheets can be adjusted by using factors derived from studies in which these areas and volumes have been compared with computations made from detailed reservoir area surveys. Flood plain areas outlined on quad sheets can be adjusted by use of a few representative cross sections. Cross sections obtained by stadia are of sufficient accuracy for this purpose.

c. Foundations and Materials. Except in unusual cases, core drilling should not be necessary in order to estimate the foundation condition. In this connection, previous studies made

ORAED

31 October 1966

SUBJECT: Engineering Studies for Water Resources Development
in Appalachia

on the stream or in the geologic region should be utilized to the fullest extent. Foundation studies made by highway departments and railroads for bridge crossings both above and below the site under investigation should be utilized. These data, coupled with a detailed field investigation by district geologists and with published geological information for the area, should be adequate. If no information is available from any of these sources a limited number of core-holes may be drilled, generally not more than three. The location of the holes should be established by a geologist in the field. At each site one core-hole should be at the outlet works location.

d. Cost Estimates. If a similar project at the site has been previously studied, the recent cost estimates should be adequate. However, if some time has elapsed, repricing may be necessary. A detailed land appraisal of the reservoir area should not be necessary in order to arrive at an estimate of the costs of lands and rights-of-way. Utilizing experience in the construction of adjacent projects, the costs of lands should be based on such projects which have been constructed within the last two to three years. If it is suspected that coal underlies the project, or studies by the Bureau of Mines so indicate, costs derived in previous studies for the subordination of these deposits should be relied upon to provide estimates of such cost.

4. It is considered that these "short-cuts" are required to maintain the existing schedule. Also, the timing of the State plans, Appalachian Regional Commission research, and other studies is so late in relation to the submission date of the Water Resource Survey that every means must be used in order to submit the report on 1 July 1968. It is realized that these proposals are at variance with many existing regulations and criteria for preparation and submission of Survey Reports for projects to be recommended for authorization. However, it is believed that they are in consonance with many recent comments of the Committees of Congress concerning the amount of time required for and the cost of preparation and submission of Survey Reports.



W. ROPER
Brigadier General, USA
Division Engineer

ENGCW-PD (31 Oct 66)

1st Ind

SUBJECT: Engineering Studies for Water Resources Development
in Appalachia

DA, CofEngrs, Washington, D. C., 20315, 6 December 1966

TO: Division Engineer
Ohio River Division

1. Your proposed procedures for expediting preparation of the Appalachia report in order to meet established schedules, are approved. However, consideration should be given to the following suggestions.

2. Previous overall land valuation and mineral valuation should be reviewed in the light of current market conditions in the immediate area of a project; if a significant change is indicated, previously estimated values should be adjusted accordingly.

3. In situations where the proposed "short-cuts" in surface and subsurface investigations reduce the reliability of cost estimates, the contingency item should be increased to compensate therefor.

FOR THE CHIEF OF ENGINEERS:



E. P. YATES
Colonel, Corps of Engineers
Acting Director of Civil Works

Preceding Page BLANK - NOT FILMED



DEPARTMENT OF THE ARMY
OHIO RIVER DIVISION, CORPS OF ENGINEERS
P. O. BOX 1159
CINCINNATI, OHIO 45201

ORADE

25 May 1967

SUBJECT: Criteria for Use in Comprehensive Surveys and Other Investigations in Appalachia

TO: Chief of Engineers
ATTN: ENGCW-PE

1. Reference is made to the following:

a. Letter ENGCW-PE, 1 July 1965, Subject: "Special Guidance for Appalachian Studies."

b. Letter ENGCW-PE, 27 December 1965, Subject: "Special Guidance for Appalachian Studies (Supplementary)."

c. Senate Report No. 13, 89th Congress, 1st Session (27 January 1965), which reported out the Appalachian Regional Development Act of 1965, page 16.

d. Memorandum for the Chief of Engineers, 24 March 1967, from Mr. Alfred B. Fitt (information copy only at this office).

2. Generally, references 1a and 1b provide that any study in Appalachia should be made in accordance with the Appalachian criteria and guidance given therein, and later amplified in Evaluation Procedures. Recently the Kanawha River Basin Comprehensive Survey Coordinating Committee agreed that their planning would be modified to plan for development on the basis of the Appalachian developmental benchmarks in lieu of the A. D. Little projections.

3. Reference 1c states: ". . . the Corps of Engineers will not delay authorized study programs or the reporting of existing studies which contain favorable recommendations." The concern of the Senate Public Works Committee was that recommendations for project authorization should not be delayed until the 1968 submission of the Appalachian Report, when the project was otherwise favorable. OCE issued verbal instructions in 1965 that somewhat amended the Committee's intent; the field was instructed not to include Appalachian criteria in general investigations if the project appeared feasible under normal criteria.

ORADE

25 May 1967

SUBJECT: Criteria for Use in Comprehensive Surveys and Other Investigations in Appalachia

4. The Appalachian Water Resource Survey has now reached the stage where these instructions should be modified. There is a tendency in some District and Division offices in Appalachia to categorize going studies as "Special Appalachian" and 'Regular' with the result that only the "Special Appalachian" studies receive the benefit of consideration for total responsive water and related resource development during the crucial decision making stages. Such situations need correction because projects formulated under normal criteria without deliberate consideration of Appalachian objectives may fall short of both regional and national goals. Projects scoped and formulated under Appalachian criteria will often be markedly different from those scoped under efficiency criteria used previously. What is needed is timely consideration of all factors so as to minimize later modifications and to assure that all projects in Appalachia, whenever scoped and formulated, become in fact an integral part of the comprehensive plan for water resource development in accordance with Section 206(f) and 206(c) of the Appalachian Regional Development Act of 1965.

5. For the above reasons, I recommend that instructions be given to all Districts and Divisions in Appalachia that planning for all surveys should be made in accordance with the Appalachian criteria and guides.

6. I realize that information in reference 1d is at some variance with this position. However, it is my understanding that your office will clear this when the Upper Licking River Report is submitted to Mr. Fitt.



W. ROPER
Brigadier General, USA
Division Engineer

ENGCW-PE(ORADE 25 May 1967)

1st Ind

SUBJECT: Criteria for Use in Comprehensive Surveys and Other Investigations
in Appalachia

DA, CofEngrs, Washington, D.C. 20315 29 June 1967

TO: Division Engineer, Ohio River

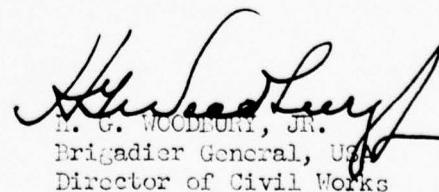
1. We fully appreciate your concern regarding the need to modify our existing procedure for evaluating water resource projects to facilitate the orderly development of the Appalachia Water Resource Survey. We also concur with your views that all water resource projects in this region should be evaluated on a consistent basis, so that each project will be harmonious with the total plan. The basic problem confronting us at this time is the establishment of a fully acceptable evaluation procedure for the Appalachia region. Significant strides have been made by the Office of Appalachia Studies in developing this evaluation procedure but we do not believe it has progressed to the point where the issuance of supplemental guidance to our Field Offices is warranted. For example, there is not agreement in this Office that the Salyersville Project Report provides the correct delineation of national expansion benefits. Hence, we are unable to make a definitive presentation of the costs to the Nation, if any, when Appalachia planning objectives are used to justify the construction of a water resource project or program, as proposed in Mr. Fitt's 24 March 1967 Memorandum, copy inclosed.

2. Pending further clarification of the methodology for the identification and measurement of the national and regional expansion type benefits, the instructions referred to in subparagraphs 1a and b of the basic correspondence should be considered as providing the guidance for all water resource projects in the Appalachia region. Development and redevelopment benefits should be evaluated and included in project justification to the extent it can be clearly demonstrated that the employment opportunities associated with the construction, operation and maintenance of the project and in the induced economic activities will reduce worker unemployment or underemployment in the region. The inclusion of such benefits will not be dependent upon the need to demonstrate economic feasibility; they should be included in the formulation and analysis of all projects in or impacting on Appalachia from now on.

3. Reporting Officers should recognize that projects formulated under present criteria may differ from those formulated to optimize regional economic development. In consideration of the evolving nature of the Appalachian studies, reporting Officers should incorporate sufficient flexibility in their General Investigation Studies and authorization recommendations to permit modifications prior to construction in order to maximize net developmental effects.

FOR THE CHIEF OF ENGINEERS:

Incl
as


H. G. WOODBURY, JR.
Brigadier General, USA
Director of Civil Works

Page 25 of 32
Exhibit No. 3

Preceding Page BLANK - NOT FILMED



DEPARTMENT OF THE ARMY

OHIO RIVER DIVISION, CORPS OF ENGINEERS

P. O. BOX 1159, 550 MAIN STREET

CINCINNATI, OHIO 45201

IN REPLY REFER TO ORAED

3 November 1967

SUBJECT: Guidance for Plan Formulation Studies, Appalachia Water Resource Survey

TO: Office, Chief of Engineers

1. Reference is made to:

- a. ER 1165-2-1, 9 Nov 64.
 - b. Letter, ENGCW-PE, subject, "Special Guidance for Appalachian Studies, 1 July 1965.
 - c. Letter, ENGCW-PE, subject same as reference b, 27 Dec 65.
 - d. Appalachian Regional Development Act of 1965 (PL 89-4).
2. Background. Federal responsibilities in the planning and development of water resources are defined in reference 1a and are further enlarged upon in reference 1b and 1c, copies of which are inclosed for ready reference. The objective of economic development as an additional purpose for studies in the Appalachian Region was specified in reference 1d, section 206(a) which states in part ". . . giving special attention to the need for an increase in the production of economic goods and services within the region as a means of expanding economic opportunities and thus enhancing the welfare of its people, which plan shall constitute an integral and harmonious component of the regional economic development program authorized by this Act."

3. Problem. It appears that the degree of Federal interest in construction of programs and projects in the Appalachian Region although the projects are scoped and oriented to user demands for goods and services, may be inconsistent with precedent. The "Appalachian" District offices are now proceeding with plan and project formulation based on guidance furnished in the listed references. Further guidance is needed to establish the permissible degree of Federal interest in such programs and projects for which there is no clearly established basis for federal participation and for which a substantial response in expansion benefits to the nation is anticipated. A number of cases are presented below with Office of Appalachian Studies' policy recommendations.

ORAED

3 November 1967

SUBJECT: Guidance for Plan Formulation Studies, Appalachia Water Resource Survey

4. a. Single Purpose Recreation Projects. Direct Federal interest would be limited to those projects which form an integral part of a system in a basin plan or in the special case of developing Federal lands (including National Forests and National Recreation Areas). Additional factors affecting the selection of such a project would be (1) User Benefits equal to or greater than project costs and (2) Expansion benefits in the National Account equal to or greater than project costs.

b. Projects Without Flood Control, Navigation or Irrigation. Many portions of Appalachia are located in headwater areas contiguous to metropolitan centers. Comprehensive water resource development could require the development of sites to provide municipal and industrial water supply, water quality control and recreation. It is proposed to recommend such projects for Federal participation if the following conditions are met: (1) User benefits are equal to or exceed project costs and (2) social and economic aspects are such that expansion benefits (to the nation) would be appreciable and timely.

c. Projects with Flood Control, Navigation or Irrigation but Costs Allocated to Recreation Exceed 50 Percent of Total Project Costs. A number of projects under study have favorable user benefit-to-cost ratios, form a significant addition in meeting basin wide goals for water resource development (inside and outside of Appalachia), are located favorably with respect to population centers, access routes and possess favorable scenic attributes. The last three locational factors influence the magnitude of recreation use to the extent that many of these projects exceed the limit of 50% of project costs that can be allocated to recreation provided for in the Federal Water Projects Recreation Act (PL 89-72). Most of these projects would also produce significant levels of user benefits outside the Appalachian region because of their location. Although the recreation potential would not be a dominant factor in the selection of the site or the formulation of the project for basic purposes, neither should a location advantageous to recreational development be detrimental to proper scoping and formulation. Therefore, it is recommended that the limit on project costs allocated to Recreation be raised to 65% if the following conditions are met: (1) User benefits are equal to or exceed project costs, (2) Expansion benefits in the national account are equal to or exceed 15% of project costs.

5. Cost Sharing and Repayment. At the present time allocation of costs as a basis for cost sharing is proposed to be made as presented in the Interim Survey Report, Upper Licking River Basin, Kentucky. However, further consideration of the proposals advanced in reference 1b concerning the allocation of costs to the expansion objectives is anticipated as the water resource development plan for Appalachia is formulated. Deferred repayment schedules will be proposed in cases when the fiscal capability of non-Federal interests is limited and where requirements to finance complementary developmental investment programs should be given priority in allocating available local public funds.

ORAED

3 November 1967

SUBJECT: Guidance for Plan Formulation Studies, Appalachia Water
Resource Survey

6. Since the time remaining for completion of this Study is short,
early consideration of the above proposals would be appreciated. Copies of
this letter have been sent to "Appalachian" Districts and Divisions and
their comments and viewpoints requested.

4 Incls
as

J. A. Graf
J. A. Graf
Colonel, Corps of Engineers
Acting Division Engineer

Preceding Page BLANK - NOT FILMED

ENGCW-PD (3 Nov 67)

1st Ind

SUBJECT: Guidance for Plan Formulation Studies, Appalachia Water Resource Survey

DA, CofEngrs, Washington, D. C. 20315

11 December 1967

TO: Division Engineer
Ohio River Division

1. Our planning responsibility under Section 206 of the ARD Act requires preparation of a plan for development and use of water and related resources best suited to meet the defined Appalachia objectives. Clearly, this may necessitate inclusion of elements of types other than those which normally are considered to lie within the functional range of Federal program interest or, more narrowly, Corps program interest. Further, it may necessitate identification of appropriate changes in the traditional levels of Federal interest in cases where functional interest already is well established.

2. In accordance with the foregoing there is no barrier to inclusion of projects of the types outlined in paragraphs 4a, 4b, and 4c of the basic letter if their inclusion leads to development of the plan best suited to serve the defined Appalachia objectives. It is considered preferable to make acceptance - rejection decisions on plan elements in terms of overall service to the defined Appalachia objectives rather than on the basis of specific guide percentages, user-benefit response criteria, etc.

3. Identification of the appropriate level of Federal interest and the most appropriate Federal program in the case of non-conventional plan elements are second-stage considerations. It is not considered practicable to establish specific guidelines at this time for all possible shadings and variations in these areas. Comments follow with respect to projects of the types outlined in paragraphs 4a, 4b, and 4c of the basic letter (assuming prior decision that the defined Appalachia objectives will be well served by their inclusion):

a. Para. 4a. Program identification should be based on established areas of agency interest and practical consideration of functional capability. The level of Federal participation should be based on established programs with such adjustments or deferrals in local responsibility as are clearly necessary to permit the project to serve Appalachia program objectives in effective manner.

b. Para. 4b. The considerations outlined for the Para. 4a case apply.

ENGCW-PD (3 Nov 67)

11 December 1967

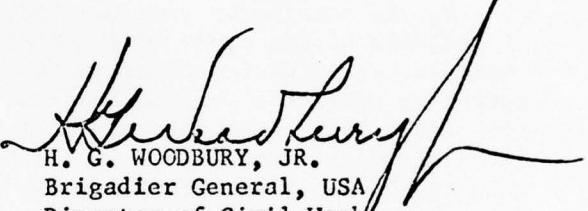
SUBJECT: Guidance for Plan Formulation Studies, Appalachia Water Resource Survey

c. Para. 4c. The 50 percent rule established in PL 89-72 is a program rather than Federal interest rule. There is no basis for arbitrarily modifying the rule; however, where there is a clear functional basis for proposing inclusion of "over 50 percent" projects in the Corps program this should be done without hesitation, stating the reasons for this action. In general, solution of program and level problems will be eased by recognizing economic expansion as an established Federal interest function and by allocating project costs to that function. It is understood that the Appalachia study group is proceeding with development of procedures for this kind of allocation.

4. Deferred payment schedules, as suggested in paragraph 5 of the basic letter, are acceptable when (as is the case with all plan features) they clearly are desirable to foster defined Appalachia objectives.

FOR THE CHIEF OF ENGINEERS:

4 Incls
w/d


H. G. WOODBURY, JR.
Brigadier General, USA
Director of Civil Works

REPORT FOR DEVELOPMENT OF WATER RESOURCES IN APPALACHIA
PLAN OF SURVEY

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Pages</u>	<u>Par. Nos.</u>
I	INTRODUCTION	1- 6	1- 14
II	AUTHORITIES FOR STUDY	7-10	15- 18
III	PHYSICAL CHARACTERISTICS OF THE REGION	11-16	19- 36
IV	ECONOMIC CHARACTERISTICS OF THE REGION	17-20	37- 41
V	EXISTING WATER RESOURCES SCALE OF DEVELOPMENT	21-24	42- 50
VI	AVAILABLE RESOURCE PLANNING DATA	25-32	51- 60
VII	IDENTIFIED WATER RELATED PROBLEMS	33-34	61
VIII	OBJECTIVES OF THE SURVEY	35-38	62- 68
IX	INVESTIGATIONS AND ASSIGNMENTS	39-54	69-113
X	CONSTRAINTS, CONTROLS AND FORMULATION	55-60	114-122
XI	PRELIMINARY OUTLINE OF FINAL REPORT	61-62	123-124
XII	COOPERATION AND COORDINATION	63-68	125-146
XIII	WORK SCHEDULE	69-70	147-149
XIV	FUNDING	71	150

<u>Exhibit</u>	<u>Title</u>
1	Preliminary Map - Appalachian Region a. List of Completed Projects b. List of Authorized Projects
2	Map - Standard Metropolitan Statistical Areas
3	Table - Standard Metropolitan Statistical Area Data

<u>Exhibit</u>	<u>Title</u>
4	Pertinent Prior Corps of Engineers Reports
5	Pertinent Outstanding Investigations
6	Presently Identified Water Resource Development Problems
7	The Mine Drainage Pollution Problem
8	Developing a Strategy for Growth - ARC
9	Location and Details Small Watershed Programs - SCS
10a&b	OCE Letters, "Special Guidance for Appalachian Studies"
11	Tentative Outline of Report
12	Critical Path Diagram
13	Primary and Alternate Members - WDCCA
14	Study Cost Estimate (PB-6)
15	Tentative Allocation of Funds by Agencies
16	Federal Agencies in Appalachia <ul style="list-style-type: none"> a. Dept. of the Army b. Dept. of Agriculture c. Dept. of Commerce d. Federal Power Commission e. Dept. of Health, Education & Welfare f. Dept. of Interior
17	Map - Developmental Highway Corridors
* 18	Distribution Required by State & Commonwealth for Simultaneous Review and Coordination of Reports*
19	Economic Base Study Information, Office of Business Economics, U.S. Department of Commerce

FIRST MEETING

WATER DEVELOPMENT COORDINATING COMMITTEE FOR APPALACHIA

Ashville, North Carolina - 20-21 September 1965

AGENDA

<u>Items</u>	<u>Time</u> (Monday)
1. Introductory Remarks - Col. John C. H. Lee, Jr.	9:30 - 9:40 AM
2. Welcome - Honorable E. W. Eller, Mayor of Asheville	
3. The Coordinating Committee, Mission and Operating Procedures - Colonel Lee	9:40 - 10:30
4. Going Survey Investigations and Recent Accomplishments of the Corps of Engineers in Appalachia - A. C. Winters	10:50 - 11:20
5. TVA Planning of Water Resource Development in the Appalachian Region - Reed Elliot	11:20 - 11:40
6. USDA - Water Resource Survey - Appalachia - T. A. Evans	11:40 - 12:10 PM
7. Water Pollution Control Activities - Comprehensive Planning for Water Quality Control and Acid Mine Drainage - R. A. Vanderhoof	12:10 - 12:30
8. Department of the Interior, Agency Programs - Fred Wampler	2:00 - 2:05
Fish and Wildlife Resources in Appalachia - A Preliminary Appraisal - Donald Reese	2:05 - 2:30
9. <u>State Problem Areas</u>	
A. Pennsylvania - Alan Sommerville	
B. New York - F. W. Montanari	
C. Maryland - A. R. Miller	
D. Virginia - J. M. Alexander	2:30 - 3:50
10. <u>State Problem Areas</u>	
A. North Carolina - Gen. J. R. Townsend	
B. South Carolina - L. E. Hendricks	
C. Georgia - Prof. Carl Kindsvater	
D. Alabama - Col. Robert Stephany	3:50 - 4:50

Dinner Meeting:

Toastmaster:

Honorable Woodrow Jones
North Carolina's ARC Representative

Speaker:

Mr. J. W. (Pat) Fleming
Special Assistant (and later Federal
Cochairman), ARC

"APPALACHIA'S ECONOMY AND THE NATION'S GROWTH"

(Tuesday)

11. Water Resource Planning for Economic Stimulus
and Growth - R. W. Harrison 8:30 - 9:15 AM
12. State Problem Areas
- A. Tennessee - Linzy Albert
B. West Virginia - Bern Wright
C. Kentucky - Steve Wakefield
D. Ohio - Col. C. T. Foust 9:15 - 10:15
13. An Appalachian Research Program - Robert Gidez 10:30 - 11:00
14. Tentative Plan of Survey, Water and Related
Resources in Appalachia - F. O. Siwgart 11:00 - 11:30
15. Discussion, Comments, Next Meeting 11:30 - 12:15 PM

Adjourn

WATER DEVELOPMENT COORDINATING COMMITTEE FOR APPALACHIA
SECOND MEETING
BIRMINGHAM, ALABAMA
24-25 FEBRUARY 1966

AGENDA

TIME	TOPIC	SPEAKER OR DISCUSSION LEADER
10:00 - 10:10 AM	Call to order, invocation, welcome	Col. John C. H. Lee, Jr.
10:10 - 10:20	Introduction to Agenda	Col. John C. H. Lee, Jr.
10:20 - 10:50	<u>Plan of Survey</u> Section I - Introduction Section II - Authorities for Study Section VIII - Objectives of the Survey	Col. John C. H. Lee, Jr. Col. John C. H. Lee, Jr. Col. John C. H. Lee, Jr.
11:20 - 11:40	<u>Plan of Survey</u> Section III - Physical Characteristics of the Region Section IV - Economic Characteristics of the Region Section V - Existing Water Resource Scale of Development	Mr. Forrest Swiggart Mr. Robert Fulton Mr. A. C. Winters
11:50 - 12:20 PM	<u>Plan of Survey</u> Section VI - Available Resource Planning Data Section VII - Identified Water Related Problems	Mr. Robert Harrison Col. John C. H. Lee, Jr.

TIME	TOPIC	SPEAKER OR DISCUSSION LEADER
2:00 - 2:20 PM	<u>Plan of Survey</u> Section IX - Investigations and Assignments	Lt. Col. Matthew W. Hoey
2:35 - 3:05	<u>Plan of Survey</u> Section X - Constraints, Controls and Formulation Section XI - Preliminary Outline of Final Report	Mr. Robert Fulton Mr. Forrest Swiggart
3:35 - 3:55	<u>Plan of Survey</u> Section XII - Cooperation and Coordination	Mr. Joseph Perrey
4:05 - 4:35	<u>Plan of Survey</u> Section XIII - Work Schedule Section XIV - Funding	Col. John C. H. Lee, Jr. Lt. Col. Matthew W. Hoey
7:30	Dinner Meeting - Speaker: J. W. Woodruff, Jr. Topic: "Planning in the Southeast for the Future" Second Day	
9:00 - 9:10 AM	Introduction of Economic Presentations	Mr. Robert Harrison
9:10 - 9:55	Water Resource Development Planning as an Aspect of Regional Economic Analysis	Dr. Jack Knetsch
10:25 -10:55	Contributions of ARC to Knowledge of Economic Regions of Appalachia in Relation to Water Resource Development	Mr. Robert Gidez
10:55 -11:15	Summary of Economic Presentations and Discussion	Mr. Robert Harrison
11:15 -11:30	Summary of Meeting & Adjourn	

THIRD MEETING

WATER DEVELOPMENT COORDINATING COMMITTEE FOR APPALACHIA

MINE DRAINAGE POLLUTION FIELD TRIP

6 JULY 1966

<u>TIME</u>	<u>PLACE</u>
8:30 AM	Assemble at William Penn Place entrance of Penn-Sheraton Hotel, Pittsburgh, Pennsylvania.
10:00	1. Arrive at STOP 1, Experimental Acid Mine Drainage Neutralization Facility at the Thompson Borehole of Vesta No. 5 Mine of Jones and Laughlin Steel Corporation. This plant, located near Beallsville in Washington County, Pa., treats about 150,000 gallons of mine drainage water per day and produces about 4,000 gallons of "yellow-boy" per day. The yellow-boy is disposed of in a worked-out mine, below drainage.
11:20	2. Arrive at STOP 2, site of leakage from inactive Oliver No. 2 Mine. Site is along State Road 51 five miles north of Uniontown, Pa. Hydrostatic pressure in the Oliver No. 2 Mine has caused water to break through the surface of the ground and drain into Redstone Creek.
1:30 PM	3. Arrive at STOP 4, abandoned mine of C & T Coal Co. in Greene County near Point Marion, Pa. The Pittsburgh Seam of coal (about five feet thick) is exposed near the entrance of the mine. Streaks of iron sulphide are clearly visible in the upper part of the seam.
1:50	4. Arrive at STOP 5, L & J Coal Co. strip mine reclamation project in Greene County near Point Marion. At this site the regrading of a strip mining operation has just been completed, and across the road an earlier reclamation project can be seen as it appears after vegetation has returned. A strip-mine operation where no reclamation work has been started is also visible in the area.
2:25 PM	5. Arrive at STOP 6, No. 1 Air Shaft Borehole of Shannopin Mine of Jones and Laughlin Steel Corp. on Dunkard Creek near Dunkard, Greene County, Pa. This borehole discharges a large amount of mine drainage water into Dunkard Creek and causes an acid pollution situation which can be clearly seen by the discoloration of rocks in the bed of the stream downstream from the point of discharge.

THIRD MEETING

WATER DEVELOPMENT COORDINATING COMMITTEE FOR APPALACHIA

CONFERENCE

<u>Item</u>	<u>Time</u> (7 July 1966)
6. Call to order and Introductory Remarks - Col. John C. H. Lee, Jr., Chairman	11:00 - 11:10 AM
7. Water Resource Developments in Greater Pittsburgh Area - Col. James E. Hammer, District Engineer, Pittsburgh	11:10 - 11:30
8. Programs in Mine Drainage Pollution Control - William E. Bullard and John R. Hyland, Federal Water Pollution Control Administration	11:30 - 12:00 noon
9. OBE's Economic Base Study - Robert E. Graham, Chief, Regional Economics Division, Office of Business Economics	
a. Regionalization of Appalachia	
b. Analysis of the Regions	
c. Projected Economic Activity by Regions	1:30 - 2:45 PM
10. Tennessee Valley Authority Report - Reed A. Elliot, Director, Water Control Planning, TVA	2:45 - 3:00
11. Federal Power Commission Report - Clarence L. Fishburne, Jr., Deputy Regional Engineer, FPC	3:15 - 3:30
12. Interior Report - Fred Wampler, Regional Coordinator	
a. Federal Water Pollution Control Administration	
b. Bureau of Mines	
c. Bureau of Sport Fisheries and Wildlife and Bureau of Commercial Fisheries	
d. Bureau of Outdoor Recreation	
e. U. S. Geological Survey	
f. National Park Service	
g. Southeastern Power Administration	3:30 - 4:20 PM

<u>Item</u>	<u>Time</u>
13. Progress in Research - Robert M. Gidez, Director, Planning Division, Appalachian Regional Commission	4:30 - 4:45 PM
14. Dinner Meeting: Speaker - Carl B. Jansen, Chairman, Allegheny Conference on Community Development	7:00
Topic -- "Water Resources - Challenge of the Future"	
	(8 July 1966)
15. Report of Office of Appalachian Studies - Colonel John C. H. Lee, Jr.	9:00 - 10:00 AM
a. Planning by Corps of Engineers Districts	- A. C. Winters
b. Study Flow Diagram	- A. C. Winters
c. Evaluation Procedures	- R. W. Harrison
d. Special Measurement Problems in Appalachian Planning	- R. W. Harrison
e. Planning Workshop	- F. O. Swiggart
f. Flood Plain Information Studies	- F. O. Swiggart
g. Base Maps of the Appalachian Region	- F. O. Swiggart
h. Flood Control Projects in Labor Training Programs	- F. O. Swiggart
16. Agriculture Report - Thomas B. Evans, State Conservationist, U. S. Soil Conservation Service	
a. Soil Conservation Service	
b. Forest Service	10:30 - 10:50
17. Reports by the States - Joseph I. Perrey, Moderator - Alabama, Georgia, Kentucky, Maryland, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, West Virginia	10:50 - 11:50
18. Adjourn	12:00 noon

FOURTH MEETING
WATER DEVELOPMENT COORDINATING COMMITTEE FOR APPALACHIA

Cincinnati, Ohio
26-27 October 1966

AGENDA

Wednesday, 26 October

1. Call to order and Introductory Remarks - Col. John C. H. Lee, Jr., Chairman
2. Reports on Initial Phase Studies - Moderator, Colonel Lee
 - a. Baltimore District
 - b. Tennessee Valley Authority
 - c. Norfolk District
 - d. Huntington District
 - e. Buffalo District
 - f. Savannah District
 - g. Wilmington District
 - h. Mobile District
 - i. Charleston District
 - j. Delaware River Basin Commission and Philadelphia District
 - k. Pittsburgh District
 - l. Louisville District
 - m. U.S. Soil Conservation Service
 - n. Nashville District

Thursday, 27 October

3. "Where We Stand in the Appalachian Survey" - Col. John C. H. Lee, Jr.

4. Report on Appalachian Commission Planning - Robert M. Gidez, Director, Planning Division Appalachian Regional Commission
 - a. Industry Location Study
 - b. Recreation as an Industry
 - c. Public Service Facilities Inventory
 - d. Overall Data Development
5. Evaluation Procedures for Appalachian Water Resource Planning - Robert L. Fulton, Assistant Chief, Economics Branch, Office of Appalachian Studies
6. Sub-regional Planning Reports - Colonel Lee
7. Projections by Office of Business Economics - Robert E. Graham, Chief, Regional Economics Division, Office of Business Economics
8. Work Schedule for Report - A. C. Winters, Assistant Chief, Engineering Branch, Office of Appalachian Studies
9. Closing Announcements

FIFTH MEETING
WATER DEVELOPMENT COORDINATING COMMITTEE FOR APPALACHIA

Atlanta, Georgia
15-16 February 1967

AGENDA

Theme: Some of the Major Methodologies of the Appalachian Survey

	<u>Time</u> (15 February 1967)
1a. Introductory Remarks - Col. John C. H. Lee, Jr.	10:00 - 10:10 AM
b. Welcome - Honorable Morgan Redwin, Executive Secretary, Office of Governor Lester G. Maddox	
2. OBE Projection Methods - Henry L. DeGraff, Office of Business Economics	10:10 - 10:30
3. Establishing Developmental Benchmarks for the Appalachian Survey - R. W. Harrison, Office of Appalachian Studies	10:30 - 10:50
4. Results of Project Screening - A. C. Winters, Office of Appalachian Studies	10:50 - 11:50
5. Report on the Salyersville Pilot Project - Col. John C. H. Lee, Jr., Director, Office of Appalachian Studies	11:50 - 12:30
6a. Determination of Expansion Benefits for Selected Project Areas (Part I) - Robert L. Fulton, Office of Appalachian Studies	2:00 - 2:30 PM
b. Determination of Expansion Benefits for the Salyersville Pilot Project (Part II) - Dr. David Spaeth, Spindletop Research, Inc.	
7. Projections Available for Appalachian Planning and Their Use - R. A. Matson, Tennessee Valley Authority	2:30 - 3:00
8. Contributions of the Appalachian Regional Commission to the Appalachian Survey - Robert M. Gidez, Appalachian Regional Commission	3:00 - 3:20
9. Preparation of Final Report and Appendices - W. T. Whitman, Office of Appalachian Studies	3:40 - 4:00

10. Work Schedule for Report - A. C. Winters, Office 4:00 - 4:15 PM
- 11a. Some Basic Facts Concerning Small Watershed Projects - Thomas B. Evans, State Conservationist, U.S. Soil Conservation Service 4:15 - 5:00
- b. Economic Considerations in the Small Watershed Program in Appalachia - and The Use of Expansion Benefits in Upstream Watershed Project Evaluation - Charles Lemon, U.S. Soil Conservation Service

DINNER MEETING

Speaker: Mr. J. W. Fanning
Vice President for Services
University of Georgia

"ENVIRONMENTAL ASPECTS OF RESOURCES PLANNING:

- (16 February 1969)
12. Evaluation of Fish and Wildlife in Water Resource Projects - Donald H. Reese, Bureau of Sport Fisheries and Wildlife 8:40 - 9:10
 13. Methods for Obtaining and Interpreting Ground Water Data in the Appalachian Study - Granville G. Wyrrick, U.S. Geological Survey 9:10 - 9:40
 14. Role of the Bureau of Outdoor Recreation - Jerome F. Anderson, Bureau of Outdoor Recreation 9:40 - 10:10
 15. Methodology of the Federal Water Pollution Control Administration in Studies for the Appalachian Survey - Keith O. Schwab, Federal Water Pollution Control Administration 10:30 - 11:00
 16. Prevention of Water Pollution by Drainage from Mines - Dr. Paul H. Struthers, Office of Appalachian Studies 11:00 - 11:30
 17. An Overall Methodology for the Appalachian Water Resources Survey - Col. John C. H. Lee, Jr., Office of Appalachian Studies 11:30 - 11:50
 18. Closing Remarks and Adjourn 11:50 - 12:00 Noon

SIXTH MEETING
WATER DEVELOPMENT COORDINATING COMMITTEE FOR APPALACHIA

Binghamton, New York
15-16 June 1967

AGENDA

Theme: Integration of Planning Efforts

- | | Time*/
(15 June 1967) |
|--|--------------------------|
| 1. Convene - | 9:30 AM |
| a. Introduction - Colonel John C. H. Lee, Jr. | |
| b. Welcome - New York State Representative | |
| c. Welcome - Broome County Chamber of Commerce Representative | |
| d. Welcome - Binghamton City Representative | |
| 2. Integral and Harmonious Planning in Appalachia and Status Report - Central Appalachian Study Region - Ralph Widner, Executive Director, Appalachian Regional Commission | 10:00 AM |
| 3. Refinement and Application of Developmental Benchmarks in Appalachia - Joe Auburg, Office of Appalachian Studies | 11:20 AM |
| 4. Department of Interior: | 1:30 PM |
| a. Cooperative Efforts in Appalachia - Fred Wampler, Regional Coordinator | |
| b. Role of National Park Service Appalachian Studies - Glenn Taylor, National Park Service | |
| 5. Report on North Atlantic Regional Study and North East Water Supply Study - B. H. Dodge, Chief of Planning, North Atlantic Division - Corps of Engineers | 1:50 PM |

*/ The general sequence of events is given; times will not be rigidly adhered to, and discussion will be encouraged.

6. Department of Agriculture:

2:20 PM

a. Recent Developments in USDA Appalachian Studies -
Robert Quilliam - USDA Field Representative for
Appalachia

b. Using Expansion Benefits in Upstream Watersheds -
Charles Lemon, SCS, Washington, D. C.

7. Appalachian Report Preparation, Review, and Reproduction - 3:10 PM
W. T. Whitman - Office of Appalachian Studies

8. Panel: Content and Scope of Sub-Regional Reports 3:50 PM

Moderator: F. O. Swiggart, Chief Engineer, APS

Members: R. A. Matson, Economist, TVA
Ben Netzer, Planning Branch, Pittsburgh District, CE
K. V. Boone, Planning Branch, Mobile District, CE

(16 June 1967)

9. New York State Investment Plan - W. E. Tyson, Director, 8:00 AM
NYS Appalachian Program

10. New York State Water Resource Program - 8:15 AM
N. L. Barbarossa, Asst. Director, Div. Water Resources

11. Panel: State Plans for General Development and Water 8:40 AM
and Water Resource Development

Moderator: F. W. Montanari, New York
Members: Col. L. E. Spears, West Virginia
Col. C. T. Foust, Ohio
A. J. Sommerville, Pennsylvania

12. Report on Appalachian Economic Seminars - 10:10 AM
R. W. Harrison, Chief Economist, APS

13. Recently Developed Techniques in Project Analysis - 10:30 AM
W. E. Leegan - Chief of Planning, Louisville District, CE

14. Summarization - Forrest O. Swiggart, Deputy Director, APS 11:30 AM

SEVENTH MEETING
WATER DEVELOPMENT COORDINATING COMMITTEE FOR APPALACHIA

Knoxville, Tennessee
15-16 November 1967

AGENDA

Theme: Coordination of Planning and Report Production

Time*/
(15 November 1967)

1. Convene - Colonel John C. H. Lee, Jr., Chairman 9:30 AM
 - a. Welcome - Knoxville Chamber of Commerce Representative
 - b. Welcome - Tennessee State Representative
 - c. Purpose of Meeting - Colonel John C. H. Lee, Jr.
2. The Challenge of the Appalachian Water Resources Survey - John D. Whisman, States' Regional Representative, Appalachian Regional Commission 9:45 AM
3. Essential Considerations in the Water Resource Survey
 - a. North Carolina Supplement to Water Sub-region Report, Col. T. G. Harton - N. C. Dept. of Water Resources 10:05 AM
 - b. South Carolina - Clair P. Guess, Jr. 10:25 AM
 - c. Georgia - Joe P. Walters 10:35 AM
 - d. Alabama - Col. Robert C. Stephany (Ret) 10:45 AM
 - e. Mississippi - G. Thompson Pound 10:55 AM
 - f. Tennessee - Kenneth A. Ackley 11:05 AM
 - g. Kentucky - Col. James A. Thetford (Ret) 11:15 AM
 - h. Virginia - J. M. Alexander 11:25 AM
 - i. West Virginia - Edgar N. Henry 12:45 PM

*/ The general sequence of events is given; times will not be rigidly adhered to, and discussion will be encouraged.

Wednesday, 15 November (Cont'd)

- | | | | |
|----|--|--------------------------|----------|
| j. | Maryland | - Herbert M. Sachs | 12:55 PM |
| k. | Ohio | - Col. C. T. Foust (Ret) | 1:05 PM |
| l. | Pennsylvania | - Alan J. Sommerville | 1:15 PM |
| m. | New York | - F. W. Montanari | 1:25 PM |
| n. | Water Resources Study Coordination with States -
James S. Matthews, Water Resources Coordinator, Office
of Appalachian Studies | | 1:35 PM |
| o. | Summary - John Whisman | | 1:45 PM |
| 4. | Federal Power Commission Planning - Clarence Fishburne | | 2:25 PM |
| 5. | Department of the Interior Status Report | | |
| a. | Fred Wampler, Regional Coordinator | | 3:05 PM |
| b. | U.S. Geological Survey Report - G. G. Wyrick,
Geologist | | 3:10 PM |
| c. | Federal Water Pollution Control Administration -
K. O. Schwab, Chief, Technical Services | | 3:25 PM |
| d. | Bureau of Sport Fisheries and Wildlife - R. G. Oberst,
Chief, Section of Water Resource Surveys | | 3:45 PM |
| e. | Bureau of Outdoor Recreation - H. H. Wilkerson,
Appalachian Task Leader | | 4:00 PM |
| f. | Bureau of Mines - S. A. Feitler, Mining Engineer | | 4:15 PM |

DINNER MEETING

Speaker: Mr. A. J. Wagner
Chairman
TVA Authority

(16 November 1969)

6. United States Department of Agriculture Status Report

- | | | |
|----|---|---------|
| a. | Planning Progress - R. E. Quilliam, USDA, WDCCA
Member | 8:15 AM |
| b. | Appendix A - Norris Caryl, Staff Leader, WRD | 8:25 AM |

Wednesday, 15 November (Cont'd)

(16 November 1969)

7. Research in the Water Resources Survey
 - a. Spindletop Research Studies - R. W. Harrison, APS 8:55 AM
 - b. The Input-Output Studies - Dr. Richard Howes 9:10 AM
 - c. Water Uses by Appalachia Industries - Robert Brewer, BDSA 9:30 AM
8. Plans for Informing the Public - F. O. Swiggart, APS 10:05 AM
9. The Ohio River Basin Framework Survey Report - G. Von Gunten, ORD 10:10 AM
10. Office of Appalachian Studies Status Reports
 - a. Overview and Main Report Summary - A. C. Winters, APS 10:25 AM
 - b. Economic Base Study, Appendix E - J. Auburg, APS 10:45 AM
 - c. Hydrology - J. Clare, APS 11:00 AM
11. Meeting Summary - Colonel John C. II. Lee, Jr. 11:45 AM

REPORT WRITING WORKSHOP

There was a workshop of those directly responsible for writing Sub-regional Reports between 1:30 p.m., and 4:00 p.m., 16 November in the Grand Ballroom of the Hotel. Authors of Appendices were invited if they wished to attend.

EIGHTH MEETING
WATER DEVELOPMENT COORDINATING COMMITTEE FOR APPALACHIA

Cincinnati, Ohio
8 May 1968

AGENDA

Theme: The Final Report - Content and Rescheduling

Time (Approx.)
(8 May 1968)

- | | |
|--|----------|
| 1. Convene - Colonel John C. H. Lee, Jr., Chairman | 10:30 AM |
| a. Purpose of Meeting - Transcript and Generalized Minutes | |
| b. Agreement on Agenda | |
| c. The Draft Letter - Announcing the Changes | |
| 2. Restructuring the Report - APS Staff | 10:50 AM |
| a. The Seven Parts of the Main Report | |
| b. The Remaining Appendices | |
| c. Consensus on the Project Packages | |
| 3. Discussion of Report Proposals - Col. Lee, Moderator | 12:45 PM |
| a. Department of Agriculture - R. E. Quilliam | |
| b. Federal Power Commission - Clarence Fishburne | |
| c. Department of Interior - Fred Wampler | |
| d. Tennessee Valley Authority - Reed Elliot | |
| e. Department of Transportation - Phillip E. Franklin | |
| 4. State Water Resource Supplements | 2:20 PM |
| a. Status - James S. Matthews | |
| b. Discussion | |
| 5. Review of the Schedule - Forrest O. Swiggart | 2:50 PM |
| 6. Publishing the Final Report - Forrest O. Swiggart | 3:15 PM |
| ADJOURN | 4:30 PM |

ALABAMA LAWS, POLICIES AND PROGRAMS
PERTAINING TO
WATER AND RELATED LAND RESOURCES

by

Geological Survey of Alabama
University of Alabama

for

State of Alabama

NOT
Preceding Page BLANK - FILMED

ALABAMA LAWS, POLICIES AND PROGRAMS
PERTAINING TO
WATER AND RELATED LAND RESOURCES

TABLE OF CONTENTS

<u>PART</u>		<u>Page</u>
I.	ALABAMA CONSTITUTION OF 1901 - PROVISIONS AND AMENDMENTS RELATING TO WATER	1
	PROVISIONS WHICH RELATE TO THE USE AND CONTROL OF WATER	3
	ARTICLE I. Declaration of Rights	3
	ARTICLE II. State and County Boundaries	3
	AMENDMENTS WHICH PERTAIN TO WATER	5
	AMENDMENT XV. Drainage System, Public Roads and Seawall	5
	AMENDMENT XXII. Drainage Districts	5
	AMENDMENT XLV. Drainage Districts in Colbert County.	6
	AMENDMENT CXVI. State Works of Internal Improvement Along Navigable Waterways and Indebtedness Therefor	6
	AMENDMENT CLII. Mobile County Road, Bridge, and Drainage Bonds	7
	AMENDMENT CCXXVII. Development of Irrigation Districts	9
	AMENDMENT CCXLIII. Development of Elk River Watershed Area in Lauderdale and Limestone Counties	9
	AMENDMENT CCXLVII. Development of Bear Creek Watershed Area	10
	AMENDMENT CCLVII. Water Management Districts	10
	AMENDMENT CCLXX. Tombigbee Valley Development Authority	11
II.	ALABAMA STATUTES CONCERNED, DIRECTLY OR INDIRECTLY, WITH THE USE, CONTROL OR MANAGEMENT OF ITS WATER, WATERWAYS OR WATER SYSTEMS	13
	1940 CODE OF ALABAMA RECOMPILED 1958	
	Alabama Water Management Act	15
	Statutory Authority Which Pertains to Water	23

TABLE OF CONTENTS (Cont'd.)

<u>PART</u>		<u>Page</u>
II. (Continued)		
Soil and Water Conservation Districts	24	
Watershed Conservancy Districts	25	
Gulf States Marine Fisheries Compact	33	
Supervision of Public Lands	39	
Water Resources Research Institute	43	
Powers, Rights and Duties of Corporations	45	
Water Conservation and Irrigation Agencies	49	
Erection of Dams for Mills, Gins or Factories	53	
Water Works and Water Supplies	59	
Water Improvement Commission	61	
Leases by State	73	
Navigation and Watercourses	74	
Obstructing Navigation; Dams, etc.	85	
Dams on Navigable Rivers	87	
Rights of Riparian Owners	89	
Tombigbee-Tennessee Waterway Development Compact	93	
Tennessee-Mulberry Waterway Commission	97	
Elk River Development Agency	99	
Alabama River Development Authority	103	
Bear Creek Development Authority	105	
III. ALABAMA SUPREME COURT CASES PERTAINING TO THE USE OR CONTROL OF WATER AND WATERWAYS		109
RIPARIAN AND LITTORAL RIGHTS		
The Riparian Rights Doctrine	111	
Definitions	113	
Riparian and Littoral Rights	114	
1. Access to Waters in General	114	
2. Injuries to Riparian Rights by Improvements of Channels and Streams	114	
3. Injuries to Riparian Rights by Construction	115	
4. Injuries to Riparian Lands by Flotage of Logs	115	
5. Shores and Banks	115	
6. Islands and Sandbars	115	
7. Wharves, Docks, Piers, etc.	115	
8. Appropriation and Prescription	116	
9. Accretion and Alluvion	126	

TABLE OF CONTENTS (Cont'd.)

<u>PART</u>	<u>Page</u>
III. (Continued)	
10. Ownership of Bed of Stream	127
Apolinsky, <u>The Development of Riparian Law in Alabama</u> , 12 Ala. L. Rev. 172 (1960)	128
11. Pollution	129
(a) Rights as to Purity of Water	129
(b) Nature and Extent of Pollution	129
(c) Mines and Mining Operations	129
(d) Mills and Factories	131
12. Artificial Ponds, Reservoirs, Dams, and Flowage ...	132
13. Surface Waters	133
14. Subterranean and Percolating Waters	133
Rogers, <u>Title to Subaqueous Lands in Alabama</u> , 11 Ala. L. Rev. 288 (1959)	134
IV. ALABAMA SUPREME COURT CASES PERTAINING TO THE USE OR CONTROL OF WATER AND WATERWAYS	135
NAVIGABILITY	
1. Test of Navigability	137
2. Ebb and Flow of Tide	137
3. Specific Waters	138
4. Constitutional and Statutory Provisions	138
5. Ownership of Waters	138
6. Navigation Rights in General	139
7. Possession and Use Accorded to Riparian Owners	139
8. Leases	139
9. Reclamation and Improvement	140
10. Ownership and Control of Lands under Water by the State	143
11. Power to Grant	143
12. Seaward Boundary Defined	144
13. Title to Land formed by Accretion	144
14. Obstructions to Navigation	144
15. Legal Terminology and Definitions	145
Two Doctrines for the Division of Land formed by Accretion	148

TABLE OF CONTENTS (Cont'd.)

<u>PART</u>	<u>Page</u>
<u>COURT CASES BRIEFED IN PART THREE</u>	
Hendrick v. Johnson, 6 Port. 472 (1838)	117
Abbot's Ex'r v. Doe ex. dem. Kennedy, 5 Ala. 393 (1843)	118
Stein v. Burden, 29 Ala. 127 (1856)	119
Crabtree v. Baker, 75 Ala. 91 (1883)	122
Ulbricht v. Eufaula Water Co., 86 Ala. 587, 6 So.78 (1888)	122
Sloss-Sheffield Steel & Iron Co. v. Mitchell, 167 Ala. 226, 52 So.69 (1909)	123
Greenfield v. Powell, 218 Ala. 397, 118 So.556 (1928)	124
Hood v. Murphy, 231 Ala. 408, 165 So.219 (1936)	124
Rollan v. Posey, 271 Ala. 640, 126 So.2d 464 (1961) ...	125
Hill v. Davis, 272 Ala. 166, 130 So.29 39 (1961)	125
Brown v. Alabama Power Co., 275 Ala. 467, 156 So.2d 153 (1963)	125
Greenfield v. Powell, 220 Ala. 690, 127 So.2d 153 (1963)	127
Alabama Consol. Coal and Iron Co. v. Turner, 145 Ala. 639, 39 So.603 (1905)	129
Jones v. T.C.I. Ry. Co., 202 Ala. 381, 80 So.463 (1918)	129
Yolande Coal & Coke Co. v. Pierce, 12 Ala. App.431, 68 So.563 (1915)	130
American Tar Products Co. v. Jones, 17 Ala. App.481, 86 So.113 (1920)	130
T.C.I. Ry. Co. v. Hamilton, 100 Ala. 252, 14 So.167 (1893)	131
Alabama Consol. Coal & Iron Co. v. Turner, 145 Ala. 639, 39 So.603 (1906)	131
Montgomery Limestone Co. v. Bearden, 256 Ala. 269, 54 So.571 (1951)	132
Central of Georgia Ry. Co. v. Champion, 160 Ala. 517, 49 So.415 (1909)	132
<u>COURT CASES BRIEFED IN PART FOUR</u>	
State v. Argiro, 273 Ala. 44, 134 So.2d 209 (1961)	140
Mayor of Mobile v. Eslava, 9 Port. 577 (1839)	141
State v. Gill, 259 Ala. 177, 66 So.2d 141 (1953)	142

TABLE OF CONTENTS (Cont'd.)

PART

Page

COURT CASES CITED IN PART THREE

<u>PART</u>	<u>Page</u>
<u>COURT CASES CITED IN PART THREE</u>	
City of Birmingham v. Lake, 243 Ala. 367, 10 So.2d 24 (1942)	111
Hood v. Murphy, 231 Ala. 408, 165 So.219 (1946)	111
Mobile Docks Co. v. Mobile, 146 Ala. 198, 40 So.205 (1906)	111
Elmore v. Ingalls, 245 Ala. 481, 17 So.2d 674 (1944) ...	111
American Tar Products v. Jones, 17 Ala. App. 481, 86 So.113 (1920)	111
Barber Pure Milk Co. v. Young, 38 Ala. App. 13, 81 So.2d 324 (1955)	112
Mobile & O. R. Co. v. Red Feather Coal Co., 218 Ala. 582, 119 So.606 (1928)	112
Williams v. Glover, 66 Ala. 189 (1880)	114
United States v. Turner, 175 F. 2d 644 (1949)	114
Howard v. State, 23 Ala. App.228, 124 So.912 (1929)	114
State v. Argiro, 273 Ala. 44, 134 So.2d 209 (1961)	114
Lynn v. United States, 110 F. 2d 586 (1940)	114
Jacobs v. United States, 45 F. 2d 34 (1930)	115
Gulf Red Cedar Co. v. Walker, 132 Ala. 553, 31 So.374 (1902)	115
City of Mobile v. Eslava, 9 Port. 577 (1839)	115
Kemp v. Thorpe, 3 Ala. 291 (1842)	115
Mobile Transp. Co. v. City of Mobile, 153 Ala. 409, 44 So.976 (1907)	115
McDonnell v. Murnon Shipbuilding Corp., 210 Ala. 611, 98 So.887 (1914)	116
Alabama Consol. Coal & Iron Co. v. Turner, 145 Ala. 639, 39 So.603 (1905)	116
Bullock v. Wilson, 2 Port. 436 (1835)	124
Tallassee Falls Mfg. Co. v. State, 13 Ala. App. 623, 68 So.805 (1915)	124
Pippen v. Carpenter, 208 Ala. 1, 93 So.878 (1922)	126
Atlanta & B. Air Line Ry. v. Wood, 160 Ala. 657, 49 So.426 (1909)	129
Parsons v. T.C.I. Ry. Co. 186 Ala. 84, 64 So.591 (1914). Alabama Consol. Coal & Iron Co. v. Vines, 151 Ala. 398,	129
44 So.377 (1907)	129
Corona Coal Co. v. Hoober, 204 Ala. 221, 85 So.477 (1920)	129
Hill v. Davis, 272 Ala. 166, 130 So.2d 39 (1961)	132
Brown v. Alabama Power Co., 275 Ala. 467, 156 So.2d 153 (1963)	132
Burson v. Saliba, 270 Ala. 212, 116 So.2d 609 (1960) ...	133

TABLE OF CONTENTS (Cont'd.)

<u>PART</u>	<u>Page</u>
<u>COURT CASES CITED IN PART THREE (Cont'd.)</u>	
Dekle v. Vann, 279 Ala. 153, 182 So.2d 885 (1966)	133
Sloss-Sheffield Steel & Iron Co. v. Wilkes, 231 Ala. 511, 165 So.764 (1936)	133
Shahan v. Brown, 179 Ala. 425, 60 So.891 (1913)	133
Killian v. Killian, 175 Ala. 224, 57 So.825 (1912)	133
<u>COURT CASES CITED IN PART FOUR</u>	
United States v. Turner, 175 F. 2d 644 (1949)	137
Rollan v. Posey, 271 Ala. 640, 126 So.2d 464 (1961)	137
Sayre v. Dickerson, 278 Ala. 477, 179 So.2d 57 (1965)	137
United States v. Appalachian Elec. Power Co., 107 F. 2d 769 (1915)	137
United States v. Property on Pinto Island, 74 F. Supp. 92 (1947)	137
Blackman v. Mauldin, 164 Ala. 337, 51 So.23 (1909)	137
Alabama Power Co. v. Gulf Power Co., 283 F. 606 (1922) ...	138
Chamberlain v. Board of Commissioners of City of Mobile, 243 Ala. 662, 11 So.2d 724 (1943)	138
City of Mobile v. Eslava, 9 Port. 577 (1839)	138
Alabama Power Co. v. Smith, 229 Ala. 105, 155 So.601 (1934)	139
McDonnell v. Murnon Shipbuilding Corp., 210 Ala. 611, 98 So.887 (1924)	139
Sullivan v. Spotswood, 82 Ala. 163, 2 So.716 (1886)	139
Mobile Transportation Co. v. Mobile, 128 Ala. 335, 30 So.645 (1900)	141
Mobile Dry Docks v. Mobile, 146 Ala. 207, 40 So.205 (1906)	141
State v. Alabama Power Co., 176 Ala. 626, 58 So.462 (1912)	141
Hood v. Murphy, 231 Ala. 408, 165 So.219 (1936)	143
Howard v. State, 23 Ala. App. 228, 124 So.912 (1929)	143
Lyons v. State, 23 Ala. App. 231, 124 So.915 (1929)	143
United States v. States of Louisiana, Texas, Mississippi,, Alabama and Florida, 364 U.S. 502 (1960)	143
State v. Argiro, 273 Ala. 33, 134 So.2d 209 (1961)	143
St. Louis-San Francisco Ry. Co. v. Motor Vessel D. Mark, 243 F. Suppl 689 (1965)	144

TABLE OF CONTENTS (Cont'd.)

<u>PART</u>		<u>Page</u>
V.	ALABAMA ATTORNEY GENERAL OPINIONS RELATING TO WATER	149
1.	State Legislature has Power to Legislate on Public Bodies of Water Subject to Paramount Rights	151
2.	Oysters - Riparian Rights	152
3.	Water and Waterways	152
VI.	ALABAMA AGENCIES CONCERNED WITH WATER RESOURCES	153
	List of Agencies	155
1.	Department of Agriculture and Industries	157
2.	Department of Conservation	157
3.	Geological Survey of Alabama	158
4.	State Oil and Gas Board	160
5.	Department of Public Health	161
6.	Water Improvement Commission	161
7.	State Highway Department	161
8.	Alabama State Docks Department	162
9.	State Planning and Industrial Development Board ..	162
10.	State Soil and Water Conservation Committee	163
11.	Tennessee-Mulberry Waterway Commission	163
12.	Tennessee-Tombigbee Water Development Authority ..	163
13.	Water Resources Research Institute	163
14.	Warrior-Tombigbee Development Association	164
15.	Coosa-Alabama River Improvement Association	164
16.	Bear Creek Development Authority	164
17.	Alabama Plan for Emergency Management of Water Resources	164
VII.	INTERSTATE AGENCIES, INVOLVING ALABAMA, WHICH ARE CONCERNED WITH WATER RESOURCES	167
	List of Interstate Agencies	169
1.	Resources Advisory Board, Southeast River Basins .	171
	(a) Southeast Basins Committee	171
2.	The Appalachian Regional Commission	172

TABLE OF CONTENTS (Cont'd.)

<u>PART</u>		<u>Page</u>
VII. (Continued)		
3. Gulf States Marine Fisheries Commission		172
4. Note Pertaining to the Publication: - "Water Resources and Economic Development in the South"		172
VIII. PROGRAMS RELATING TO WATER		173
I. RESEARCH		175
A. Hydrogeologic Study of Alabama		175
B. Flood-Frequency Synthesis for Small Streams ..		175
C. Rates of Runoff from Small Rural Watersheds ..		176
D. Verification of Hydraulic Computation Methods for Bridge Sites		176
E. Field Measurement of Hydraulic Factors-Performance of Chanel Changes		176
F. Wragg Swamp Canal Investigation		176
G. Sewage Lagoon Study		176
H. Field Measurement of Hydraulic Factors - Performance of Culverts		176
I. The Development of Geochemical and Geophysical Techniques as an Aid to Determining Availability of Ground Water in Limestone Terrains		177
J. Factors Affecting the Deterioration of Culvert Pipe and Drainage Structures in Small Drainage Basins in Alabama		177
K. Geologic, Mineral and Water Resources Factors to Aid Planning and Economic Development in Growth Areas		177
II. DATA COLLECTION AND INTERPRETATION		177
A. Collection of Basic Records - Surface Water ..		177
B. Collection of Basic Records - Ground Water ...		177
C. Water Resources of the Upper Tombigbee-Black Warrior River Basin		177
D. Water Resources of the Upper Coosa River Basin in Alabama		178
E. Low-Flow Investigations in the Tennessee River Basin in Alabama		178

TABLE OF CONTENTS (Cont'd.)

<u>PART</u>	<u>Page</u>
VIII. (Continued)	
II. DATA COLLECTION AND INTERPRETATION (Continued)	
F. Hydrology of Choctawhatchee-Escambia River Basins	178
G. Water Resources of Southwest Alabama	178
III. PLANNING	179
A. Project Planning, Reports, Dissemination of Information	179
B. Flood Studies and Bridge-Site Investigations	179
C. Study of Conservation Lakes	179
D. Relation of Oil and Gas Industry to Water Resources	179
E. Rapid Appraisal of Water for Industrial Development	179
F. Water Development Site Studies, National Park Service	180
IV. REGULATION: CONSTRUCTION AND DEVELOPMENT	180
A. Flood Control	180
B. Water Supply	180
C. Water Quality Control	180
D. Hydro-Electric Power	180
E. Navigation and Hydraulic Structures	
F. General Recreation	
G. Fish and Wildlife	181
H. Well Drilling	181
I. Channel Encroachments	181
J. Use of Flood Plains	181
IX. ALABAMA WATERWAYS	183
1. The Tennessee River	185
2. Warrior-Tombigbee System	186
3. The Coosa-Alabama River System	188
4. Private Power Dams	188
5. Chattahoochee River	190
6. Choctawhatchee and Pea Rivers	190
7. Tennessee-Tombigbee Waterway	191

TABLE OF CONTENTS (Cont'd.)

<u>PART</u>	<u>Page</u>
X. MAPS RELATING TO THE ALABAMA WATERWAY SYSTEMS	197
List of Maps Relating to the Alabama Waterway Systems ..	199
1. Map of Alabama showing Locations of Dams and Reservoirs Representing Principal Sources of Stream Flow Regu- lation	201
2. River Basins in Alabama	202
3. Map of Alabama showing Area Variation in Median 7- Day Low Flow of Minor Streams	203
4. Bear Creek Watershed	204
5. Appalachian Counties of Alabama	205

PART ONE

ALABAMA CONSTITUTION
OF
1901

PROVISIONS AND AMENDMENTS
RELATING TO WATER

Preceding Page BLANK - NOT FILMED

ALABAMA CONSTITUTION OF 1901

PROVISIONS WHICH RELATE TO THE USE AND CONTROL
OF WATER

ARTICLE I.

DECLARATION OF RIGHTS

Section 24. That all navigable waters shall remain forever public highways, free to the citizens of the State and the United States, without tax, impost, or toll; and that no tax, toll, impost, or wharfage shall be demanded or received from the owner of any merchandise or commodity for the use of the shores or any wharf effected on the shores, or in or over the waters of any navigable streams, unless the same be expressly authorized by law.

ARTICLE II.

STATE AND COUNTY BOUNDARIES

Section 37. The boundaries of this State are established and declared to be as follows, that is to say: Beginning at the point where the thirty-first degree of north latitude crosses the Perdido River; thence east, to the western boundary line of the State of Georgia; thence along said line to the southern boundary line of the State of Tennessee, crossing the Tennessee River, and on to the second intersection of said River by said line; thence up said River to the mouth of Big Bear Creek; thence by a direct line to the northwest corner of Washington County, in this State, as originally formed; thence southwardly, along the line of the State of Mississippi, to the Gulf of Mexico; thence eastwardly, including all islands within six leagues of the shore, to the Perdido River; thence up the said River to the beginning; provided, that the limits and jurisdiction of this State shall extend to and include any other land and territory hereafter acquired, by contract or agreement with other states or otherwise, although such land and territory are not included within the boundaries hereinbefore designated.

Preceding Page BLANK - NOT FILMED

ALABAMA CONSTITUTION OF 1901

AMENDMENTS WHICH PERTAIN TO WATER

AMENDMENT XV

DRAINAGE SYSTEM, PUBLIC ROADS AND SEAWALL

The legislature may form or provide for the formation of districts for establishing and maintaining a drainage system; for the building and maintaining of public roads, and for building and maintaining a seawall or other protection against waves, storm or flood therein; and provide for the assessment of the whole or part of the cost of such improvements against the land in such districts to the extent of the increased value of such land by reason of the special benefits derived from such improvements, and may provide for issuance of bonds by such district with or without an election. Provided the provisions as to road and seawall shall apply only to Mobile and Baldwin Counties.
(Alabama Constitution of 1901, Amendment XV, ratified: November 15, 1924.)

AMENDMENT XXII

DRAINAGE DISTRICTS

Section 1. The legislature may form or provide for the formation of drainage districts for establishing and maintaining drainage systems; and provide for the assessment of the whole or part of the cost of such improvements against the lands and property in such district to the extent of the increased value thereof by reason of special benefits derived from such improvements and may provide for the issuance of bonds for such districts with or without an election.

Section 2. This Amendment shall be retroactive and retrospective and shall operate to ratify, confirm and validate the act of the legislature of Alabama, which act provided for the drainage of farm, wet swamp, and overflow lands in the State of Alabama and authorized the organization of drainage districts, conferred the right of eminent domain to the extent necessary to carry out the purpose of said act and provided for raising of revenues by bond issue or otherwise to pay the cost and expense of installing and maintaining drainage systems so as to promote the public health and general welfare and, which act was approved March 4, 1915; and this Amendment shall operate to confirm and validate all corporate organizations under authority of such law, all procedure had, all acts done, all bonds issued, contracts entered into and assessments made by such corporations under authority of such law.
(Alabama Constitution of 1901, Amendment XXII, ratified November 17, 1928.)

AMENDMENT XLV

DRAINAGE DISTRICTS IN COLBERT COUNTY

The Court of County Commissioners of Colbert County, Alabama, is authorized to divide said County into drainage districts for the control of malaria, and said County is authorized and empowered to levy and collect in the several districts so formed, for use in the control of malaria, in addition to all other taxes now authorized by law, a special tax of three mills on all taxable property situated in the several drainage districts so formed, based upon the valuation of such property as assessed for state taxation, and to be used exclusively for the control of malaria in the drainage district in which the said tax is levied and collected, provided such tax is authorized by a majority of the qualified electors residing in such drainage district voting upon such proposition at an election called and held for the purpose of authorizing such tax, and provided that said tax shall be levied and collected for a period of ten years from the time that it is authorized at the election held in such district. Such an election may be called at any time by the Court of County Commissioners of said County and shall be held and conducted and the results canvassed as now provided by law for holding and conducting and canvassing the returns of a regular election. The proceeds of the tax hereby authorized shall be used exclusively for the control of malaria in the drainage district in which it is levied and collected and shall be expended through the proper fiscal agencies of the county government under the direction of the governing body of Colbert County, and the Colbert County Department of Public Health. (Alabama Constitution of 1901, Amendment XLV, ratified: November 15, 1940.)

AMENDMENT CXVI

STATE WORKS OF INTERNAL IMPROVEMENT ALONG
NAVIGABLE WATERWAYS AND INDEBTEDNESS THEREFOR

In addition to the authority heretofore granted it by Section 93 of this Constitution as amended, and notwithstanding the provisions of Section 213 of this Constitution as amended, and when authorized by appropriate laws passed by the legislature, the State may, at a cost of not exceeding an additional ten million dollars, engage in works of internal improvement by promoting, developing, constructing, maintaining and operating along navigable streams or waterways now or hereafter existing within the State all manner of docks, facilities, elevators, warehouses, water and rail terminals, and other structures and facilities and improvements needful for the convenient use of the same, in aid of commerce and use of the waterways of the State; provided that any such work or improvements shall always be and remain under the management and control of the State through the Alabama State Docks Department or other State governing agency. When authorized by appropriate laws passed by the legislature, the State may become indebted in an aggregate principal

amount of not exceeding \$10,000,000 for the purpose of carrying out the provisions of this Amendment and may cause to be issued its general direct obligation bonds for the repayment of such indebtedness and interest thereon and pledge the faith and credit of the State thereto. (Alabama Constitution of 1901, Amendment CXVL, ratified: December 27, 1957.)

AMENDMENT CLII

MOBILE COUNTY ROAD, BRIDGE, AND DRAINAGE BONDS

Amendment XVIII. Mobile County may at any time and from time to time issue its bonds for construction and improvement, or either, of hard surfaced roads, hard surfaced bridges, and surface water drainage facilities, or any thereof, in said County, and, to provide for payment of the principal of and interest on such bonds, may levy and collect a special annual ad valorem tax on the taxable property in said County at a rate not exceeding one-half of one per centum ($\frac{1}{2}$ of 1%) of the assessed valuation of the taxable property in said County; provided, that the total principal amount of each series of bonds at any time issued hereunder, when added to the principal amount of all then outstanding bonds theretofore issued hereunder and of all then outstanding bonds theretofore issued under any other constitutional amendment that are payable from or secured by the said special tax, shall not exceed six and one-half per centum ($6\frac{1}{2}\%$) of the assessed valuation of the taxable property situated in said County, as assessed for state taxation for the ten preceding state tax year; provided, further, that the rate of the said special tax levied for payment of the bonds at any time issued hereunder and all other bonds at any time issued pursuant to any other constitutional amendment and payable out of or secured by said special tax shall not exceed said rate of one-half of one per centum ($\frac{1}{2}$ of 1%) hereinabove specified; and provided, further, that any bonds may be issued hereunder and said special tax for payment thereof may be levied and collected only after a majority of the qualified electors of said County voting at an election called for that purpose by the governing body of said County shall have voted in favor of the issuance of such bonds and the levy of such tax therefor. Each such election shall be called, held, conducted, and canvassed, and notice thereof shall be given, in the manner provided by the general laws of Alabama respecting elections on the issuance of bonds by counties, as such laws may exist at the time such election is called; provided, that prior to the holding of any election hereunder, the governing body of Mobile County shall cause to be prepared engineering maps and reports respecting the proposed work on roads, bridges and drainage facilities, or any thereof, shall adopt a resolution containing a brief description, including the name, if any, of each proposed item of construction or improvement, a statement of the length or location of each such item and of the estimated cost thereof, and a statement of the total amount of the bonds proposed to be issued for all work of construction or improvement described in said resolution, and shall

cause said resolution to be published in a newspaper published in the County one time not less than thirty days before such election. Any number of items of construction or improvement may be described in one resolution; and the question of the issuance of bonds and the levy and collection of said tax, with respect to all of the work described in each resolution, shall be submitted to the voters in one single proposition at any election held hereunder. Any number of such resolutions may be adopted on the same day, and any number of propositions may be submitted to the voters on the same day. Each engineering report prepared in accordance with the provisions hereof shall be accompanied by a certificate of the engineer preparing such report that the material proposed to be used for any road or bridge work described in such report meets the then existing specifications of the Alabama Highway Department applicable to the same type of construction or improvement.

The limitation of six and one-half per centum ($6\frac{1}{2}\%$) of the assessed value of taxable property in the County, hereinabove provided for, is applicable only to the amount of bonds that may be outstanding immediately following the delivery of each series of bonds issued hereunder and shall not restrict the total amount of bonds that may be from time to time issued hereunder.

The bonds issued hereunder shall be general obligations of Mobile County secured by a pledge of its full faith and credit, and in addition thereto, the governing body of said County shall in the proceedings providing for the issuance of bonds specially pledge for payment of the principal thereof and the interest thereon, so much of the said special tax as may be necessary to pay said principal and interest at their respective maturities. Each such pledge of the special tax made for the benefit of the bonds issued hereunder shall be on a parity with all valid pledges of said special tax theretofore or thereafter made for the benefit of bonds issued hereunder or under any other constitutional amendment, to such extent as shall not impair the obligations of any then existing valid pledges. The principal of each series of said bonds shall mature in annual installments, the first of which installments shall mature not later than three (3) years after the date of the bonds of said series and the last of which shall mature not later than thirty (30) years after the date of the bonds of said series; provided, that the maturities of each series of bonds issued hereunder shall be so arranged at the time of the issuance of such series of bonds that (a) no annual installment of principal of the bonds of such series maturing during any fiscal year of said County shall be more than four times as great as the smallest installment of principal of any series of bonds maturing during any prior fiscal year, and (b) the aggregate amount of principal and interest that will mature in any one fiscal year with respect to that series of bonds, and all other bonds then outstanding that arepayable out of or secured by a pledge of the aforesaid special tax, shall not exceed the amount of the proceeds collected from the said tax during the then next preceding tax year. Except as herein otherwise provided, all bonds issued hereunder shall be issued in accordance with, and shall be subject to, the provisions

of the general laws of Alabama respecting the sale, execution, issuance, and redemption of bonds by counties, as such laws may exist at the time of the delivery of such bonds.

The provisions of this Amendment shall be self-executing, and the enactment of local legislation shall not be a prerequisite to the taking of any action hereunder by the said County and its governing body; and no local legislation at any time adopted with respect to this Amendment shall be effective, and all such local legislation is hereby repealed. (Alabama Constitution of 1901, Amendment CLII, ratified: February 26, 1960.)

AMENDMENT CCXXVII

DEVELOPMENT OF IRRIGATION DISTRICTS

The legislature may by general, special or local laws authorize the formation of a body corporate for the development of one or more irrigation districts for the purposes of providing irrigation and water conservation in the State of Alabama, and may authorize the counties and municipalities lying within the boundaries of such district or districts to contribute public funds to such body corporate, and may authorize such body corporate to enter into contract with the government of the United States or any agency thereof, and with other states or political subdivisions thereof, and with other bodies corporate organized within this or other states for the development of one or more irrigation districts in the State of Alabama, and may authorize such body corporate to issue revenue bonds payable solely out of revenues accruing to such body corporate, and may authorize such body corporate to do and perform all other such acts necessary and proper for the full development of said Alabama irrigation district or districts provided, however, nothing herein shall authorize any such public corporation to engage in or finance, directly or indirectly, the production, transmission or sale of electric power. (Alabama Constitution of 1901, Amendment CCXXVII, ratified: December 13, 1965.)

AMENDMENT CCXLIII

DEVELOPMENT OF ELK RIVER WATERSHED AREA IN LAUDERDALE AND LIMESTONE COUNTIES

Any provision of Sections 93 or 104 of the Constitution to the contrary notwithstanding and either with or without compliance with Section 106 of the Constitution, the legislature shall have full power and authority to enact laws to provide for the formation of a public body corporate which shall be an instrumentality of the State for purposes of development, management, and control of the Alabama portion of the Elk River Watershed area, in Lauderdale and Limestone Counties, and any such

legislation which may have been enacted by the 1965 legislature authorizing the formation of such public bodies corporate is hereby ratified, confirmed, and given full effect in all respects. (Alabama Constitution of 1901, Amendment CCXLIII, ratified: December 13, 1965.)

AMENDMENT CCXLVII

DEVELOPMENT OF BEAR CREEK WATERSHED AREA

The legislature may by general, special, private or local laws authorize the formation in any manner of a public corporation for the development of Bear Creek, its tributaries and watershed, for the purpose of navigation, water conservation and supply, flood control, irrigation, industrial development, public recreation, and related purposes, and may authorize the Counties of Marion, Colbert, Franklin and Winston and all municipalities lying within Marion, Colbert, Franklin, and Winston Counties to donate or contribute public funds to such public corporation and may authorize such public corporation to enter into contracts with the United States of America or any agency thereof, and with the several states or political subdivisions thereof, and with other public or private corporations organized within any of the several states, for the development of the Bear Creek Watershed, and may authorize such public corporation to acquire by purchase, construction, lease, gift, condemnation, or otherwise property of any kind, real, personal or mixed, to mortgage or sell its property and to issue revenue bonds and other revenue securities payable solely out of revenues accruing to such public corporation, and may exempt such public corporation from all taxation in the State of Alabama, and may grant such public corporation all other powers and privileges which may be necessary and proper for the full development of said Bear Creek Watershed. The provisions of Sections 106, 222 and 225 of the Constitution of Alabama shall not apply to any public corporation which may be organized pursuant to enabling legislation herein authorized or to any revenue bonds and other revenue securities at any time issued by such public corporation. Such public corporation shall be deemed a political subdivision of the State of Alabama. Nothing herein shall authorize any such public corporation to engage in or finance, directly or indirectly, the production, transmission, or sale of electric power. The area comprising the Bear Creek Watershed shall include such land defined in enabling legislation herein authorized as shall lie within the Counties of Marion, Colbert, Franklin and Winston. (Alabama Constitution of 1901, Amendment CCXLVII, ratified: December 13, 1965.)

AMENDMENT CCLVII

WATER MANAGEMENT DISTRICTS

Section 1. The legislature may provide for the formation of water management districts for the establishment of works of improvement for

the drainage of wet, swamp, and overflowed lands of the State, and for flood prevention or the conservation, development, utilizations, and disposal of water within the State; confer the right of eminent domain for such purposes, provided for the taxing of the whole or part of the cost of such improvements against the lands and property in such district to the extent of the increased value thereof by reason of special benefits derived from such improvements; and provided for the issuance of bonds for such districts with or without an election; provided, however, that nothing herein shall authorize any such water management districts to engage in, or finance, directly or indirectly, the production, transmission or sale of electric power.

Section 2. The provisions of this Amendment are cumulative and shall not be construed to repeal Amendment XV or Amendment XXII. (Alabama Constitution of 1901, Amendment CCLVII, ratified: General Election, 1966.)

AMENDMENT CCLXX
(Ratified: December 13, 1967)

TOMBIGBEE VALLEY DEVELOPMENT AUTHORITY

This Amendment to the Constitution of Alabama authorized the State to engage in works of internal improvement in connection with (1) the construction and maintenance of a navigable waterway between Demopolis, Alabama, and the Tennessee River and (2) the implementation and maintenance of flood control projects on the tributary streams of the Tombigbee River; authorizing the State to issue in connection therewith interest-bearing general obligation bonds of the State in principal amount not exceeding \$10,000,000; and authorizing the State to establish a public corporation with the powers and resources necessary to undertake obligations authorized by this Amendment to be undertaken by the State.

NOTE 1: The proposal for this Constitutional was made as Act No. 248, 1967 Regular Session, p. 627, and was passed by the Senate on August 8, 1967 and passed by the House on August 17, 1967.

NOTE 2: The enabling act to the above Constitutional Amendment was passed as Act No. 264, 1967 Regular Session, p. 746, approved August 29, 1967, and it provides as follows:

1. Authorizes a public corporation to be known as the TOMBIGBEE VALLEY DEVELOPMENT AUTHORITY.

2. Further the development of the navigable waterway between Demopolis, Alabama, and the Tennessee River.

3. Further the development of a flood control project on the tributary streams of the Tombigbee River.

This Corporation is authorized to sell and issue general obligation bonds of the State in aggregate principal amount not exceeding \$10,000,000. Legislative intent:

To utilize the channel of the Tombigbee River, thus providing a new transportation route of great importance to stimulate the development of commerce, agriculture, and industry in many sections of the State. Also this would prevent some of the damaging floods that occur along the Tombigbee River.

PART TWO

ALABAMA STATUTES CONCERNED, DIRECTLY OR INDIRECTLY,
WITH THE USE, CONTROL OR MANAGEMENT OF ITS
WATER, WATERWAYS OR WATER SYSTEMS

ALABAMA CODE OF
1940

RECOMPILED
1958

With Code Identification
and
Legislative Act Citations

1940 CODE OF ALABAMA
RECOMPILED 1958

ALABAMA WATER MANAGEMENT ACT

Title 2
Article 14

Sec. 273(2). DECLARATION OF BENEFITS OF DRAINAGE. - The establishing of proper works of improvement for the drainage of wet, swamp and overflowed lands of the State, and for flood prevention or the conservation, development, utilization and disposal of water within the State is declared to promote the public health, to aid agriculture and to be in the interest of the public welfare and convenience. The State Soil Conservation Committee is hereby charged with the duty of cooperating with persons desiring to form water management districts and of aiding and advising in such development.

Sec. 273(3). JURISDICTION TO ESTABLISH WATER MANAGEMENT DISTRICTS. - The Court of Probate of any county of the State of Alabama shall have jurisdiction, power and authority to establish water management districts, as hereinafter provided, for the following purposes: to locate and establish levees, drains, or canals, and to cause to be constructed, straightened, widened or deepened any ditch, drain or watercourse; to construct for the purposes of flood prevention or the conservation, development, utilization or disposal of water, works of improvement, including levees, embankments, floodwater retarding structures, water storage structures, outlets and tide gates, flood gates and pumping plants for preventing floods, providing drainage, reducing sediment and reclaiming wet, swamp or overflowed lands, and other related works of improvement that will carry out the purposes of this subdivision; to provide maintenance for such installations; and it is hereby declared that the drainage of surface water and the reclamation of wet lands, swamplands, overflowed lands, tidal marshes, flood prevention and the conservation, development, utilization and disposal of water shall be considered a public benefit and conducive to the public health, safety, convenience, utility and welfare.

Sec. 273(11). BOARD OF WATER MANAGEMENT COMMISSIONERS. - Upon the organization of the district, the Court of Probate shall appoint three water management commissioners to be designated "Board of Water Management Commissioners", who shall have control of the affairs of the district, and each Commissioner shall be an owner of real property within the district, and shall be over twenty-one years of age, at least one of them shall be a resident of the county in which the proceedings are held. Whenever the owners of a majority in acres of the land comprising a district

petition the Court for appointment of a person qualified under this subdivision to act as a Water Management Commissioner, it shall be the duty of the Court to appoint such person or persons, but in the absence of such petition it shall be the duty of the Court to appoint such competent person or persons. Each of these Water Management Commissioners shall take the oath of office as declared by the Constitution of the State and shall also swear that he will not directly or indirectly be interested in any contract made by the Board of Water Management Commissioners, save and except so far as he may be benefited as a landowner in common with other landowners by the works constructed. Any Water Management Commissioner failing to take oath within thirty days after his appointment or failing to give bond in the sum of not less than one thousand dollars to be fixed by the Court, shall be deemed to have declined to act as Water Management Commissioner, and his place shall be filled by the Court. The said Board of Water Management Commissioners shall adopt a seal for the district and they may, from time to time, make such by-laws, rules, regulations, and order, and change the same, as they may deem proper and not inconsistent with this subdivision and the laws of the State, for the purpose of carrying into effect the object of their incorporation. They shall elect from their own number a President, and Secretary and appoint and employ such other officers, engineers, attorneys, and agents, and employ such persons, as they may deem necessary for the efficient management of their business, and may remove them at pleasure. The Water Management Commissioners appointed as aforesaid shall hold their offices, one for two years, one for four years, and one for six years from the date of their appointments, and until their successors are appointed and qualified. The Court shall indicate the term of office of each Water Management Commissioner and on the expiration of their terms of office, their successors shall be appointed in like manner for the term of six years thereafter. Said Board of Water Management Commissioners shall hold their meetings at any time and place in the county or counties in which any part of the district is situated upon the call of the President, or the President shall call a meeting when petitioned by a majority of the members of said Board; provided that an annual meeting of said Board of Water Management Commissioners shall be held at the Office of the Judge of Probate having jurisdiction over the district, on the second Monday of September each year to consider any business which may come before them in behalf of the district or any questions which any landowner may desire to present. All vacancies on the Board of Water Management Commissioners shall be filled by the Court, but if the owners of a majority in acres of the land comprising the district shall petition for the appointment of a particular person for Water Management Commissioner, it shall be the duty of the Court to appoint the person so designated. A majority of the Board of Water Management Commissioners shall constitute a quorum and the concurrence of a majority of the members at any regular or legally called meeting shall be conclusive as to any matters within the jurisdiction of said Board.

Sec. 273(14). EMINENT DOMAIN. - The power of eminent domain is hereby conferred, and such land, easements or rights-of-way within or

outside the district, which are necessary to carry out the purposes of the district, may be condemned. Nothing in this subdivision shall be construed to authorize the acquisition by eminent domain of any real property or rights owned or controlled by railroads or utilities, both public or private. The right of condemnation hereby conferred being exercised by application to the Court of Probate of the county in which the lands over which such right-of-way of outlet is desired or a material portion thereof, are situated, and the same proceedings shall be had as in cases of condemnation of lands under the right of eminent domain, and such damages as may be awarded as compensation shall be paid by the Board of Water Management Commissioners out of the first funds which shall be available from the proceeds of the sale of bonds or otherwise.

Sec. 273(15). WATER MANAGEMENT COMMISSIONERS' RIGHT TO ENTER LANDS; LIABILITY FOR DAMAGE; OBSTRUCTING ENTRANCE. - The Board of Water Management Commissioners of any district organized under this subdivision, or their employees or agents, or cooperating state and Federal agencies, including contractors and their employees, and the engineer and members of the Board of Viewers and their assistants, may enter upon the lands within or without the district in order to make surveys and examinations to accomplish the necessary preliminary purposes of the district, or to have access to work, being liable, however, for actual damage done. Any person or corporation preventing such entrance shall be guilty of a misdemeanor.

Sec. 273(16). APPOINTMENT AND REPORT OF DISTRICT ENGINEER; ASSISTANTS. - Within sixty days after the district is established it shall be the duty of the Board of Water Management Commissioners to appoint as District Engineer a competent civil or agricultural engineer of good standing in his profession who is familiar with the type of project involved, if said engineer is needed or required by the district. Such services of an engineer may not be required if engineering services are furnished by a Federal, state or local agency. In case an engineer is needed or required it shall be the duty of the Court of Probate to refer the report of the preliminary survey or other plans to the District Engineer, who shall make a survey of the district and shall prepare a report with plans for improvements for the district. Such report shall include maps, profiles, specifications, estimates of cost, and other data and descriptions which are necessary to show location and character of the proposed work, provided that map or maps shall show the boundary as closely as may be determined by the records of the tax assessor, of the land owned by each individual landowner within the district, also the location of any railroads, public highways, gas lines, power lines, other public utilities and the boundary of any incorporated town or village. Such report shall also contain an accurate description of all lands and other property, which may be needed for right-of-way or for the uses and purposes of the district. In case it is found that the data of any former surveys or other proceedings may be useful for the purposes of the

district, the Board of Water Management Commissioners may take over and use such data and may pay therefor the amount of its value to the district. The Board of Water Management Commissioners and the engineer or the agency furnishing engineering services, in the preparation and adoption of plans, shall consider the best interests of the district and are not bound to follow or adopt the plans that may be outlined in the preliminary report or plans. In case an engineer is employed, he may, at the expense of the district and with the approval of the Board of Water Management Commissioners, employ the necessary assistants in making surveys, maps, and profiles, and may secure the services of a consulting engineer or expert advisor. In case engineering services are being furnished by some organization or agency cooperating with the district, the court shall refer preliminary report or plans to said organization or agency who shall prepare plans for the works of improvement for the district. Upon receipt of the final report of the District Engineer or final plan from other competent authority concerning the surveys made of the lands and other property in the district organized, and plans for treating the same, the Board of Water Management Commissioners shall adopt such report of /or⁷ plans with any modification thereof approved by the District Engineer or other consultants after consultation. Thereafter such adopted report or plan shall be the plan for draining, leveeing, reclaiming, or protecting such lands and other property from overflow or damage by water, or for flood prevention or for the conservation, development, utilization and disposal of water, and it shall after such adoption be known and designated as the "Plan of Water Management", which plan shall be filed with the Judge of Court of Probate and incorporated into the records of the district. The committee may file with the Board of Water Management Commissioners a statement of any fact or suggestion he deems will be beneficial.

Sec. 273(36). DUTIES OF WATER MANAGEMENT ENGINEER; PAYMENT OF CONTRACTOR. - The Water Management Engineer shall have charge of the construction of the Plan of Water Management. He shall make monthly estimates of the amount of work done, and shall furnish one copy to the contractor and file the other with the Secretary of the Board of Commissioners; and the Commissioners shall within five days after the filing of such estimates meet and direct the Secretary to draw a warrant in favor of such contractor for not more than ninety percent of the work done according to the specifications and contract; and upon the presentation of such warrant, properly signed by the President and Secretary, to the Treasurer of the district he shall pay the amount due thereon. When the work is fully completed and accepted by the Water Management Engineer he shall make an estimate for the whole amount due, including the amounts withheld on previous monthly estimates which shall be paid from the Water Management fund as herein provided. In case the Water Management district installs the works of improvement with the assistance of some organization or agency, engineering services may be furnished by the cooperating organization or agency as set out above, with any additional duties being performed as required due to the two groups working together.

Sec. 273(39). HIGHWAY CROSSED BY PUBLIC DITCH, DRAIN OR WATER-COURSE. - Where any public ditch, drain or watercourse established under the provisions of this subdivision crosses a public highway at the intersection of such highway with a natural watercourse or swale through which water flows during period of high water, the cost of bridges, or of repairing or enlarging existing bridges and culverts, or of constructing new ones, shall be borne by the county in which such bridges are located or by such other authority as is required by law to maintain such highway so intersected; and such bridges or culverts shall thereafter be maintained by such county or other authorities. Where any public ditch, drain or watercourses established under the provisions of this subdivision crosses a public highway at a point where such highway does not intersect a natural watercourse or swale, the cost of constructing the new bridge required shall be borne by the Water Management District and such bridge or culvert shall thereafter be maintained by and at the expense of the county or such other authority required by law to maintain such highway so intersected.

Sec. 273(40). CONSTRUCTION CROSSING RAILROAD. - After a district has let a contract for work which crosses or traverses a railway right-of-way and the actual construction is commenced, the engineer in charge of construction shall notify the railroad company of the probable time at which the contractor will be ready to enter upon the right-of-way of said road and construct the work thereon. It shall be the duty of the said railroad to send a representative to view the ground with the engineer and arrange the exact time at which such work can be most conveniently done. At the time agreed upon the said railroad company shall remove its rails, ties, stringers, and such other obstructions as may be necessary to permit the excavation or construction of the channel or other work of improvement across its right-of-way. The work shall be so planned and conducted as to interfere in the least possible manner with the business of the said railroad. In case the railroad company refuses and fails to remove its tract or tracks so as to permit the construction of the work on its right-of-way and the passage of the necessary equipment of the contractor, it shall be held as delaying the construction of the improvement, and such company shall be liable to a penalty of one-hundred dollars per day for each day of delay to be collected by the Board of Water Management Commissioners for the benefit of the Water Management District as in case of other penalties. Such penalty may be recovered in any court of competent jurisdiction, and shall inure to the benefit of the Water Management District. Within thirty days after work is completed an itemized bill for the actual expenses incurred by the railroad company for opening its tracts shall be made and presented to the engineer of the Water Management District. Such bills, however, shall not include the cost of constructing a new bridge or of strengthening or enlarging an old one, except as herein provided. The engineer shall audit this bill, and if found correct approve the same and file it with the Secretary of the Board of Water Management Commissioners, who shall reimburse the said railroad company for such expense.

Sec. 273(41). CONTROL AND SUPERVISION OF COMPLETED IMPROVEMENT; ANNUAL TAX FOR REPAIRS AND MAINTENANCE; REPAIRS DUE TO NEGLIGENCE; REPAIR OR REPLACEMENT OF RAILROAD BRIDGE; INJURING, DAMAGING OR OBSTRUCTING IMPROVEMENT. - Whenever any improvement constructed under this subdivision is completed, it shall be under the control and supervision of the Board of Water Management Commissioners. It shall be the duty of said board to maintain the levees, ditches, drains, watercourses, floodwater retarding structures, and any other improvements, in good repair, and for this purpose the Board of Water Management Commissioners may annually levy a tax on the lands benefited by the construction of such improvement in the same manner as other water management taxes are levied, not to exceed ten percent of the assessed benefits in any one year, and the fund that is collected shall be used for repairing and maintaining the ditches, drains, watercourses, floodwater retarding structures, and other improvements in perfect order; provided, however, that if any repairs are made necessary by the act of negligence of the owner of any land through which such improvement is constructed, or by the act of negligence of his agent, tenant or employee, or if the same is caused by the cattle, hogs, or other livestock of said owner, tenant, employee, or agent, then the cost thereof shall be assessed and levied against the lands of the owner alone, to be collected by proper suit instituted by the Water Management Commissioners; provided, further, that when it shall become necessary to repair any railroad bridge or construct a new railroad bridge by reason of enlarging any watercourse or of excavating any canal intersection, or by reason of wear and tear and natural deterioration of such bridge or structure, such repairs, maintenance and improvement shall be made at the expense of the said railroad. It shall be unlawful for any person to injure or damage or obstruct any improvements constructed under the provisions of this subdivision, without securing the prior written consent of the Board of Water Management Commissioners, and any person causing any injury, damage or obstruction, or building any bridge, fence or floodgate without the consent of the Board of Water Management Commissioners shall be deemed guilty of a misdemeanor.

Sec. 273(42). OUTLET FOR LATERAL DRAIN OF LANDOWNER. - The owner of any land that has been assessed for the cost of the construction of any ditch, drain, watercourse, or other improvement as herein provided shall have the right to use the ditch, drain or watercourse as an outlet for lateral drains from said land; and if said land is separated from the ditch, drain, watercourse or other drainage improvement by the land of another or others, and the owner thereof shall be unable to agree with said other or others as to the terms and conditions on which he may enter their lands and construct said drain or ditch, he may petition to condemn the same and the same proceeding shall be had as in cases of condemnation under the right of eminent domain. When the drain is constructed it shall become a part of the drainage system and shall be under the control of the Board of Water Management Commissioners and be kept in repair by the Board as herein provided.

Sec. 273(46). ORGANIZATION OF DISTRICT OVER LANDS OF WATERSHED CONSERVANCY DISTRICT. - A Water Management District may be organized over the whole or any part of the lands covered by an existing watershed conservancy district organized under Title 2, Sections 670(1)-680 670(17), provided that: 1. The Soil Conservation District supervisors and the directors of the Watershed Conservancy District concerned file no objection to the organization; and 2. The Water Management District assumes any outstanding obligations and responsibilities of the Watershed Conservancy District. When such Water Management District is established it will supersede the Watershed Conservancy District and the Watershed Conservancy District, or that portion of the Watershed Conservancy District involved, shall be dissolved and shall no longer be in effect over the area covered by the Water Management District.

Sec. 273(47). JOINT WORKS OF IMPROVEMENT. - Whenever it may be desirable to construct, widen, deepen, straighten, or otherwise change any ditch, drain, watercourse, floodwater retarding structure, levee, or other works of improvement lying on or along, across or near the boundary line between the State of Alabama and an adjoining state, or whenever it may be desirable to construct, repair or improve any works of improvement as provided for in this subdivision which ditch, drain, watercourse, floodwater retarding structure or other works of improvement cannot be constructed, repaired or improved in the best manner without affecting lands in such adjoining state, the Board of Water Management Commissioners of the district in which such work is located shall have authority to join with the proper officers of such adjacent county or counties or districts of other states in the construction, widening, deepening, straightening, repairing or improving of any such drain, ditch, watercourse, floodwater retarding structure, or other works of improvement. Such Water Management Commissioners of any district of this state are hereby given power jointly to enter into contracts with the proper officers of such county or counties or districts in adjoining states to construct, repair, or improve any such works of improvement, each to pay such proportion of costs and expenses of the work as the contracting officials shall deem just. Such works of improvement shall be made on petition, as provided for in this subdivision, as far as applicable, shall govern the Water Management Commissioners and other officers of this state in relation to such joint works of improvement.

Sec. 273(48). AUTHORITY OF BOARD OF WATER MANAGEMENT COMMISSIONERS. - The Board of Water Management Commissioners shall have the right and authority to enter into contracts or other agreements with the United States Government or any department thereof, with persons, with railroads or other corporations, with public corporations, with the state government of this or other states, and with drainage, conservation or other improvement districts in this or other states, for cooperating or assisting in constructing, maintaining, using, or operating the works of the district, or for making surveys and investigations or reports thereon, and may

purchase, lease or acquire land or other property in adjoining states in order to secure outlets, or for other purposes of this subdivision, and may let contracts for securing such outlets or other works in adjoining states as may be necessary to carry out the provisions of this subdivision.

The Board shall have the authority to borrow funds from governmental agencies or other lending institutions in lieu of, or as a supplement to, issuing bonds. Such loans shall not exceed 40 years.

Sec. 273(58). DISSOLUTION OF DISTRICT. - Any district organized under this subdivision may be dissolved by the Court of Probate having jurisdiction thereof whenever it shall appear to said Court that the works thereof need no further care of maintenance to preserve their efficiency and usefulness, that the maintenance of the works be not further conducive to the public health, convenience, or welfare, and that all obligations of such district have been liquidated and fulfilled; provided, that the Court shall not consider the dissolution of any district except upon the petition of two-thirds of the owners of real property owning not less than two-thirds of the area taxed. Upon filing of such petition the same notice /shall be served and the same opportunity shall be given for the objections to the dissolution of the district as herein provided upon the filing of a petition for the organization of a district.

1940 CODE OF ALABAMA
RECOMPILED 1958

STATUTORY AUTHORITY WHICH PERTAINS TO WATER

Title 2
Chapter 6

Sec. 658. LEGISLATIVE DETERMINATIONS, AND DECLARATION OF POLICY. - It is hereby declared as a matter of legislative determination: That the farm, forest and grazing lands of the State of Alabama are among the basic assets of the State and that the preservation of these lands is necessary to protect and promote the health, safety, and general welfare of its people; that improper land-use practices have caused and have contributed to, and are now causing and contributing to, a progressively more serious erosion of the farm, forest and grazing lands of this State by wind and water. That the consequences of such soil erosion are the silting and sedimentation of stream channels, reservoirs, dams, ditches, and harbors; the loss of fertile soil material, the reduction in productivity or outright ruin of rich bottom lands by overwash of poor subsoil material, sand, and gravel and the deterioration of soil and its fertility. That to conserve soil resources and control and prevent soil erosion, it is necessary that land-use practices contributing to soil wastage and soil erosion be discouraged and discontinued, and appropriate soil-conserving land-use practices be adopted and carried out. It is hereby declared to be the policy of the legislature to provide for the conservation of the soil and soil resources of this State, and for the control and prevention of soil erosion, and thereby to preserve natural resources, control floods, prevent impairment of dams and reservoirs, assist in maintaining the navigability of rivers and harbors, preserve wildlife, protect the tax base, protect public lands, and protect and promote the health, safety, and general welfare of the people of this State. (Act No. 147, 1939 Gen. Acts, page 202, appvd. March 18, 1939.)

1940 CODE OF ALABAMA
RECOMPILED 1958

SOIL AND WATER CONSERVATION DISTRICTS

Title 2
Chapter 6

Sec. 659(1). CHANGE OF NAME OF STATE SOIL CONSERVATION COMMITTEE AND SOIL CONSERVATION DISTRICTS; POWERS, ETC., CONTINUED. - (a) The State Soil Conservation Committee existing pursuant to Chapter 6, Section 660 of Title 2 of the Code of Alabama of 1940, as amended, is hereby renamed and shall be known and designated as the State Soil and Water Conservation Committee.

(b) Any Soil Conservation District organized and existing under authority of Chapter 6, Section 661, of Title 2, Code of Alabama 1940, as amended, or any such Soil Conservation District that may hereafter be created under authority of such law, shall be known and designated as Soil and Water Conservation Districts.

(c) None of the powers, authority, duties, or functions of the State Soil Conservation Committee and Soil Conservation Districts created and existing pursuant to Chapter 6 of Title 2, Code of Alabama of 1940 shall be changed, revised, abated or impaired by the provisions of this Section as it is the intent and purpose of this Section only to change the name of the State Soil Conservation Committee and Soil Conservation Districts as provided by subsections (a) and (b) hereof. (Act No. 17, 1965, 3rd Spec. Sess. Vol. 1, page 222, appvd. October 29, 1965.)

1940 CODE OF ALABAMA
RECOMPILED 1958

WATERSHED CONSERVANCY DISTRICTS

Title 2
Chapter 6A

Sec. 670(1). FORMATION AUTHORIZED; PURPOSE. - Subdistricts of a Soil Conservation District, as defined by the laws of this State, may be formed in any watershed area in such Soil Conservation District for the purpose of developing and executing plans and programs relating to any phase of conservation of water, water usage, flood prevention, flood control, erosion prevention and control of erosion, floodwater and sediment damages. Such subdistricts shall be known as Watershed Conservancy Districts. (Act No. 517, 1957 Gen. Acts, page 705, appvd. September 13, 1957.)

Sec. 670(2). WHAT LANDS MAY BE EMBRACED IN DISTRICT. - The land area embraced in any Watershed Conservancy District must be contiguous and must lie within a well defined watershed. The area shall not include lands not included within a Soil Conservation District, or lands embraced within another Watershed Conservancy District. Such districts may embrace lands lying in one or more Soil Conservation Districts. (Act No. 517, 1957 Gen. Acts, page 705, appvd. September 13, 1957.)

Sec. 670(3). PETITION TO BOARD OF SUPERVISORS OF SOIL CONSERVATION DISTRICT FOR FORMATION OF WATERSHED CONSERVANCY DISTRICT. - When twenty-five or more landowners within a proposed Watershed Conservancy District, or, if less than fifty landowners are involved, a majority of the landowners in such proposed district, desire to form a Watershed Conservancy District, they shall file a petition with the Board of Supervisors of the Soil Conservation District. Such petition shall define the boundaries of the proposed Watershed Conservancy District, the number of acres of land involved, reasons for requesting creation of such district, the proposed name for such Watershed Conservancy District, and other information pertinent to such proposal. (Act No. 517, 1957 Gen. Acts, page 706, appvd. September 13, 1957.)

Sec. 670(4). PETITION WHERE PROPOSED DISTRICT LIES IN MORE THAN ONE SOIL CONSERVATION DISTRICT. - If the proposed Watershed Conservancy District lies in more than one Soil Conservation District, the petition may be presented to the Board of Supervisors of any one of such Soil Conservation Districts and the Supervisors of all such districts shall

act as a joint Board of Supervisors in the formation and supervision of such a Watershed Conservancy District. (Act No. 517, 1957 Gen. Acts, page 706, appvd. September 13, 1957.)

Sec. 670(5). HEARING UPON PETITION. - (a) Within thirty days after such petition has been filed with the Board of Supervisors, it shall cause due notice to be given of a proposed hearing upon the practicability and feasibility of creating such subdistrict. All interested parties shall have the right to attend such hearing and be heard. If it shall appear at the hearing that other lands should be included or that lands included in the petition should be excluded, the Board of Supervisors may permit such inclusion or exclusion, provided the land area involved still meets the requirements of Section 670(2) of this Chapter.

(b) If it appears upon the hearing that it may be desirable to include within the proposed district, territory outside of the area within which due notice of the hearing has been given, the hearing shall be adjourned and due notice of a further hearing shall be given throughout the entire area considered for inclusion in the district and a further hearing shall be held. After final hearing, if the Board of Supervisors determines, upon the facts presented at the hearing and upon other available information, that there is need, in the interest of the public health, safety and welfare for such a district to function in the territory considered, it shall make and record the determination and shall define, by metes and bounds, or by other satisfactory description, the boundaries of the district.

(c) If the Board determines after the hearing that it is not feasible for such district to function in the territory considered, it shall make and record the determination and shall deny the petition. (Act No. 517, 1957 Gen. Acts, page 706, appvd. September 13, 1957.)

Sec. 670(6). BOARD OF SUPERVISORS AUTHORIZED TO HOLD REFERENDUM; NOTICE OF REFERENDUM; POLLING PLACES, ETC. - After the Board of Supervisors has made and recorded a determination that there is need, in the interest of the public health, safety and welfare, for creation of the proposed Watershed Conservancy District, it shall consider the question whether the operation of a district within the proposed boundaries, with the powers conferred upon such districts in Section 670(10) of this Chapter, is administratively practicable and feasible. To assist the Board of Supervisors in this determination the Board shall, within a reasonable time after entry of the finding that there is need for the organization of the district and the determination of the boundaries of the district, hold a referendum within the proposed district upon the proposition of the creation of the district, and to cause due notice of such referendum to be given. Such notice shall state the date of holding the referendum, the hours of opening and closing the polls, and shall designate one or more places within the proposed district as polling

places. The Board shall appoint a polling superintendent and other necessary polling officers giving equal representation to the proponents and opponents of the question involved. (Act No. 517, 1957 Gen. Acts, page 706, appvd. September 13, 1957.)

Sec. 670(7). QUESTION TO BE VOTED ON AT REFERENDUM; BALLOTS; QUALIFICATIONS OF VOTERS. - The question to be voted on shall be submitted by ballots upon which appear the words:

"For creation of Watershed Conservancy District"

"Against creation of Watershed Conservancy District"

A square shall follow each proposition. The ballot shall also contain a direction to insert an "X" mark in the square following one or other of the propositions, as the voter may favor or oppose creation of the district. The ballot shall set forth the boundaries of the proposed district as determined by the Board of Supervisors. Only owners of lands lying within the boundaries of the territory, as determined by the Board, shall be eligible to vote in the referendum. Qualified voters may vote by absentee ballot in such referendum under rules and regulations prescribed by the Board of Supervisors. (Act No. 517, 1957 Gen. Acts, page 707, appvd. September 13, 1957.)

Sec. 670(8). CANVASS OF VOTES; CERTIFICATION AND RECORDING OF RESULTS. - The votes shall be counted by the election officers at the close of the polls and report of the results along with the ballots delivered to the polling superintendent, who shall certify the results to the Board of Supervisors. If a majority of the votes cast favor creation of the district, the Board of Supervisors shall certify such results to the Judge of Probate of the county or counties involved. Upon proper recording of such action, such Watershed Conservancy District shall be duly created. After recording, the certification shall be filed with the State Soil Conservation Committee. (Act No. 517, 1957 Gen. Acts, page 707, appvd. September 13, 1957.)

Sec. 670(9). ELECTION, TERMS, QUALIFICATIONS AND ORGANIZATION OF BOARD OF DIRECTORS OF WATERSHED CONSERVANCY DISTRICT. - (a) Within thirty days after a Watershed Conservancy District is created under the provisions of this Chapter, the Board of Supervisors shall cause an election to be held therein for the election of a Board of Directors of such Watershed Conservancy District. The Board of Directors shall be composed of five members, who shall hold office for a term of four years. Such Board of Directors shall, under the supervision of the Board of Supervisors, be the governing body of the Watershed Conservancy District.

(b) If the territory embraced within a Watershed Conservancy District lies within more than one Soil Conservation District, each of

said additional districts with a minority of the land involved in the watershed shall be entitled to elect three additional Directors.

(c) The Board of Directors shall annually elect from its membership a Chairman, Secretary, and Treasurer. The Treasurer shall execute an official bond for the faithful performance of the duties of his office to be approved by the Board of Directors. Such bond shall be executed with at least three solvent personal sureties whose solvency must exceed the amount of the bond, or by a surety company authorized to do business in this State, and shall be in an amount determined by the Board of Directors. If the Treasurer is required to execute a surety company bond, the premium on the bond shall be paid by the Board of Directors. A majority of the Board of Directors shall constitute a quorum, and the concurrence of a majority in any matter within their authority shall be required for its determination.

(d) Each person desiring to be a Director of a Watershed Conservancy District shall file a nominating petition with the Board of Supervisors, signed by twenty-five or more landowners within the Watershed Conservancy District of the county involved, or if less than fifty landowners are involved, a majority of such landowners. If the candidates nominated do not exceed the positions available, they shall be declared elected. No person shall be eligible to be a Director of a Watershed Conservancy District, unless he is a landowner in the district in which he seeks election. (Act No. 517, 1957 Gen. Acts, page 707, appvd. September 13, 1957.)

Sec. 670(10). POWERS OF BOARD OF DIRECTORS. - Subject to the approval of the Board of Supervisors, the Board of Directors of a Watershed Conservancy District shall have power to:

(a) Acquire, by purchase, gift, grant, bequest, or devise, or through condemnation proceedings held in the manner provided by Chapter 1 of Title 19, Code of Alabama (1940), as amended, such lands or rights of way as are necessary for the exercise of any authorized function of the district.

(b) Construct, improve, operate and maintain such structures as may be necessary for the exercise of any authorized function of the district.

(c) Borrow such money as is necessary for the purpose of acquiring rights of way and establishing, constructing, reconstructing, repairing, enlarging, and maintaining such structures and improvements as are required by the district in the performance of its functions, and issue, negotiate, and sell its bonds as provided in Section 670(11) of this Chapter. Provided, however, that all contracts made and all bonds issued by a watershed under the provisions of this Chapter shall be solely

and exclusively obligations of the district, and shall not be a obligation or debt of the State of Alabama, or any county or municipality therein.

(d) Sell, lease, or otherwise dispose of any of its property or interests therein in furtherance of the purposes provided for by this Chapter.

(e) Make and execute contracts and other instruments necessary and convenient to the exercise of its powers.

(f) Sue and be sued in the name of the district.

(g) Cooperate with, or act as agent for, the United States or any of its agencies, or the State of Alabama or any of its agencies, or any county or municipality, in connection with the acquisition, construction, operation, or administration of any project within the boundaries of the district.

(h) Accept donations, gifts, and contributions in money, services, materials, or otherwise, from the United States or its agencies, or from the State of Alabama or its agencies or from any county or municipality, or from any individual, and to use or expend such moneys, services, materials, or other such contributions in carrying out the provisions of this Chapter.

(i) Subject to the approval of the Board of Supervisors of the Soil Conservation District, employ such employees as the Board may determine, and fix their compensation, qualifications and duties, and delegate to the Chairman of the Board, or any member or employee of the Board, such powers and duties as they may deem proper. (Act No. 517, 1957 Gen. Acts, page 708, appvd. September 13, 1957.)

Sec. 670(12). DIRECTORS TO RECEIVE NO SALARIES; MAY BE REIMBURSED FOR EXPENDITURES. - Members of the Board of Directors shall receive no salaries, but may be reimbursed for actual and necessary expenditures incurred in the performance of their duties, upon approval by the Board of Supervisors. (Act No. 517, 1957 Gen. Acts, page 710, appvd. September 13, 1957.)

Sec. 670(13). PETITION OF LANDOWNER TO HAVE LANDS ADDED TO DISTRICT. -

(a) Any one or more owners of land may petition the Board of Supervisors to have their lands added to a Watershed Conservancy District. Such petition shall define the boundaries of the land desired to be annexed, the number of acres of land involved, and other information pertinent to such proposal. When the boundary described embraces lands of others than the petitioners, the petition shall so state and shall be signed by twenty-five or more of the landowners in the territory described, if fifty

or more such owners are involved, or by a majority if less than fifty landowners are involved.

(b) Within thirty days after such petition is filed, the Board shall cause due notice to be given of a hearing on such petition. All interested parties shall have a right to attend such hearing and be heard. The Board shall determine whether the lands described in the petition or any portion thereof shall be included in the district. If all the landowners in the territory involved are not petitioners, a referendum shall be held within such territory as provided in Sections 670(6), 670(7) and 670(8) of this Chapter, before making a final determination. If it is determined that such land should be added, this fact shall be certified by the Board of Supervisors to the Judge of Probate of the county or counties involved. After recording, the certification shall be filed with the State Soil Conservation Committee. (1957 Gen. Acts, page 710, appvd. September 13, 1957.)

Sec. 670(14). PETITION OF LANDOWNER TO HAVE LANDS DETACHED FROM DISTRICT. - The owner or owners of lands which have not been, are not, and cannot be benefited by their inclusion in the Watershed Conservancy District may petition the Board of Supervisors to have such lands detached. The petition shall describe such lands and state the reasons why they should be detached. A hearing shall be held within thirty days after the petition is received. Due notice of such hearing shall be given at least ten days before the hearing. If it is determined by the Board of Supervisors that such lands shall be detached, such determination shall be certified to the Judge of Probate of each county in which any portion of such lands lie. After recording, the certification shall be filed with the State Soil Conservation Committee. (Act No. 517, 1957 Gen. Acts, page 710, appvd. September 13, 1957.)

Sec. 670(15). DISCONTINUANCE OF DISTRICT. - (a) At any time after five years from the organization of a Watershed Conservancy District, twenty-five or more landowners within a district, if less than fifty landowners are involved, a majority of the landowners in such district, may file a petition with the Board of Supervisors, praying that the existence of the district be discontinued. The petition shall state the reasons for discontinuance, and that all obligations of the district have been met.

(b) After giving notice, the Board of Supervisors may conduct such hearings on the petition as may be necessary to assist it in making a determination.

(c) Within sixty days after petition is filed, a referendum shall be held and conducted, under the supervision of the Board of Supervisors, in the same manner as a referendum is required to be held and conducted under the provisions of Sections 670(6), 670(7) and 670(8) of

this Chapter. No informalities in the conduct of the referendum or in any matters relating to the referendum shall invalidate it or its result if due notice of the referendum has been given as provided in subsection (b) of this Section.

(d) If a majority of the votes cast in such referendum favor the discontinuance of the district, and it is found that all the obligations have been met, the Board of Supervisors shall make a determination that the Watershed Conservancy District shall be discontinued. A copy of the determination shall be certified to the Judge of Probate of the county or counties involved, for recording. After recording, the certification shall be filed with the State Soil Conservation Committee. (Act No. 517, 1957 Gen. Acts, page 711, appvd. September 13, 1957.)

Sec. 670(16). SUPERVISION OF WATERSHED CONSERVANCY DISTRICT WHERE SOIL CONSERVATION DISTRICT ABOLISHED. - If any supervising Soil Conservation District is discontinued, the Board of Revenue, Court of County Commissioners, or other like governing body of the county or counties involved shall serve in the same supervising capacity over the Watershed Conservancy District as the Board of Supervisors. (Act No. 517, 1957 Gen. Acts, page 711, appvd. September 13, 1957.)

Sec. 670(17). EXEMPTION FROM TAXATION. - The property and interests therein acquired by any Watershed Conservancy District organized under the provisions of this Chapter shall be exempt from all state, county, or other taxation. (Act No. 517, 1957 Gen. Acts, page 711, appvd. September 13, 1957.)

AD-A041 399

CORPS OF ENGINEERS CINCINNATI OHIO
DEVELOPMENT OF WATER RESOURCES IN APPALACHIA. MAIN REPORT. PART--ETC(U)
JUN 70

F/G 8/6

UNCLASSIFIED

3 OF 7
AD
A041 399

NL



1940 CODE OF ALABAMA
RECOMPILED 1958

Title 8
Chapter 1

Sec. 9(1). Director of Irrigation:-

There shall be established in the State Department of Conservation, the Office of the Director of Irrigation. The Director shall be a person knowledgeable in the field of conservation and experienced in reclamation and irrigation work.

It shall be the duty of the Director of Irrigation to work with and assist any irrigation district established or proposed to be established pursuant to the laws of this State. Such Director shall assist in formulating plans for the establishment of such districts prior to their incorporation, shall supervise all work and efforts in connection therewith, and shall exercise general supervision wherever state interest or conflicts arise with respect to state programs of irrigation and water conservation. (Act No. 828, 1965 General Acts of Alabama, p. 1556, appvd. September 2, 1965.)

1940 CODE OF ALABAMA
RECOMPILED 1958

Title 8
Chapter 2
ARTICLE 8

Sec. 171(18). GULF STATES MARINE FISHERIES COMPACT. - The Governor of this State is hereby authorized and directed to execute a compact on behalf of the State of Alabama with any one or more of the States of Florida, Mississippi, Louisiana and Texas, and with such other states as may enter into the compact legally therein in the form substantially as follows:

GULF STATES MARINE FISHERIES COMPACT

The contracting states solemnly agree:

Article I

Whereas the Gulf Coast States have the proprietary interest in and jurisdiction over fisheries in the waters within their respective boundaries, it is the purpose of this compact to promote the better utilization of the fisheries, marine, shell and anadromous, of the seaboard of the Gulf of Mexico, by the development of a joint program for the promotion and protection of such fisheries and the prevention of the physical waste of the fisheries from any cause.

Article II

This compact shall become operative immediately as to those states ratifying it whenever any two or more of the States of Florida, Alabama, Mississippi, Louisiana and Texas have ratified it and the Congress has given its consent subject to Article I, Section 10, of the Constitution of the United States. Any state contiguous to any of the aforementioned states or riparian upon waters which flow into waters under the jurisdiction of any of the aforementioned states and which are frequented by anadromous fish or marine species may become a party hereto as hereinafter provided.

Article III

Each state joining herein shall appoint three representatives to a commission hereby constituted and designated as the Gulf States Marine

Fisheries Commission. One shall be the head of the administrative agency of such state charged with the conservation of the fishery resources to which this Compact pertains or if there be more than one officer or agency, the official of that state named by the Governor thereof. The second shall be a member of the legislature of such state designated by such legislature or in the absence of such designation, such legislator shall be designated by the Governor thereof, provided that if it is constitutionally impossible to appoint a legislator as a commissioner from such state, the second member shall be appointed in such manner as may be established by law. The third shall be a citizen who shall have a knowledge of and interest in the marine fisheries, to be appointed by the Governor. This Commission shall be a body corporate with powers and duties set forth herein.

Article IV

The duty of the said Commission shall be to make inquiry and ascertain from time to time such methods, practices, circumstances and conditions as may be disclosed for bringing about the conservation and the prevention of the depletion and physical waste of the fisheries, marine, shell and anadromous, of the Gulf Coast. The Commission shall have power to recommend the coordination of the exercise of the police powers of the several states within their respective jurisdiction to promote the preservation of these fisheries and their protection against over-fishing, waste, depletion or any abuse whatsoever and to assure a continuing yield from the fishery resources of the aforementioned states. To that end the Commission shall draft and recommend to the Governors and legislatures of the various signatory states, legislation dealing with the conservation of the marine, shell and anadromous fisheries of the Gulf seaboard. The Commission shall from time to time present to the Governor of each compacting state its recommendations relating to enactments to be presented to the legislature of that state in furthering the interest and purposes of this Compact. The Commission shall consult with and advise the pertinent administrative agencies in the states party hereto with regard to problems connected with the fisheries and recommend the adoption of such regulations as it deems advisable. The Commission shall have power to recommend to the states party hereto the stocking of the waters of such states with fish and fish eggs or joint stocking by some or all of the states party hereto and when two or more states shall jointly stock waters the Commission shall act as the coordinating agency for such stocking.

Article V

The Commission shall elect from its number a Chairman and Vice-chairman and shall appoint and at its pleasure remove or discharge such officers and employees as may be required to carry the provisions of this Compact into effect and shall fix and determine their duties, qualifications

and compensation. Said Commission shall adopt rules and regulations for the conduct of its business. It may establish and maintain one or more offices for the transaction of its business and may meet at any time or place but must meet at least once a year.

Article VI

No action shall be taken by the Commission in regard to its general affairs except by the affirmative vote of a majority of the whole number of compacting states. No recommendation shall be made by the Commission in regard to any species of fish except by the affirmative vote of a majority of the compacting states which have an interest in such species. The Commission shall define what shall be an interest.

Article VII

The Fish and Wildlife Service of the Department of the Interior of the Government of the United States shall act as the primary research agency of the Gulf States Marine Fisheries Commission cooperating with the research agencies in each state for that purpose. Representatives of the said Fish and Wildlife Service shall attend the meetings of the Commission. An advisory committee to be representative of the commercial salt water fisherman and the salt water anglers and such other interests of each state as the Commissioners deem advisable may be established by the Commissioners from each state for the purpose of advising those Commissioners upon such recommendations as it may desire to make.

Article VIII

When any state other than those named specifically in Article II of this Compact shall become a party hereto for the purpose of conserving its anadromous fish or marine species in accordance with the provisions of Article II, the participation of such state in the action of the Commission shall be limited to such species of fish.

Article IX

Nothing in this Compact shall be construed to limit the powers or the proprietary interest of any signatory state or to repeal or prevent the enactment of any legislation or the enforcement of any requirement by a signatory state imposing additional conditions and restrictions to conserve its fisheries.

Article X

It is agreed that any two or more states party hereto may further amend this Compact by acts of their respective legislatures subject to approval of Congress as provided in Article I, Section 10 of the Constitution of the United States, to designate the Gulf State Marine Fisheries Commission as a joint regulating authority for the joint regulation of specific fisheries affecting only such states as shall so compact and at their joint expense. The representatives of such states shall constitute a separate section of the Gulf States Marine Fisheries Commission for the exercise of the additional powers so granted but the creation of such section shall not be deemed to deprive the states so compacting of any of their privileges or powers in the Gulf States Marine Fisheries Commission as constituted under the other Articles of this Compact.

Article XI

Continued absence of representation or of any representative on the Commission from any state party hereto shall be brought to the attention of the Governor thereof.

Article XII

The operating expenses of the Gulf States Marine Fisheries Commission shall be borne by the states party hereto. Such initial appropriations as are set forth below shall be made available yearly until modified as hereinafter provided:

Florida	\$ 3,500.00
Alabama	3,500.00
Mississippi	1,000.00
Louisiana	5,000.00
Texas	<u>2,500.00</u>
Total	\$15,500.00

The proration and total cost per annum of fifteen thousand, five hundred (\$15,500.00) dollars above mentioned is estimative only, for initial operations, and may be changed when found necessary by the Commission and approved by the legislatures of the respective states. Each state party hereto agrees to provide in the manner most acceptable to it, the travel costs and necessary expenses of its Commissioners and other representatives to and from meetings of the Commission or its duly constituted sections or committees.

Article XIII

This Compact shall continue in force and remain binding upon each compacting state until renounced by act of the legislature of such state, in such form as it may choose; provided that such renunciation shall not become effective until six months after the effective date of the action taken by the legislature. Notice of such renunciation shall be given to the other states party hereto by the Secretary of State of the compacting state so renouncing upon passage of the Act. (Act No. 51, 1947 General Acts, p. 17, appvd. July 1, 1947.)

Sec. 171(19). REPRESENTATIVES TO GULF STATES MARINE FISHERIES COMMISSION. - In pursuance of Article III of said compact there shall be three representatives from Alabama to the Commission created therein to be selected as follows: The Director of Conservation, shall, ex-officio, be a representative of the State of Alabama on said Commission; one representative shall be from time to time elected by the legislature from its membership and such representative shall serve for a four-year period from the date of his election or until his successor shall have been elected; the other representative shall be appointed by the Governor by and with the advice and consent of the senate and such representative shall be a citizen of the State of Alabama having a knowledge of and interest in marine fisheries' problems. The term of such representative shall be four years and he shall hold office until his successor shall be appointed and qualified. The Director of Conservation, as ex-officio representative, may delegate, from time to time, to any deputy or other subordinate in his department or office, the power to be present and participate, including voting as his representative or substitute at any meeting or hearing by or other proceeding of the Commission. (Act No. 51, 1947 Gen. Acts, p. 17, appvd. July 1, 1947.)

Sec. 171(20). POWERS OF COMMISSION. - Any powers herein granted to the Commission shall be regarded as in aid of and supplemental to and in no case a limitation upon any of the powers vested in said Commission by other laws of the State of Alabama or by the laws of the States of Florida, Texas, Mississippi, Louisiana, or by the Congress of the terms of said Compact. (Act No. 51, 1947 Gen. Acts, p. 17, appvd. July 1, 1947.)

Sec. 171(21). EXPENSES INCIDENT TO MEMBERSHIP IN COMMISSION. - All necessary expenses incident to the membership of the State of Alabama in said Commission, namely, the Gulf States Marine Fisheries Commission, shall be payable out of the Game, Fish & Seafoods Fund upon the requisition of the Director of Conservation. Such expenses shall include travel cost and necessary expenses of the Commissioners and other representatives of the State of Alabama to and from meetings of the Commission or its duly constituted sections or committees. (Act No. 51, 1947 Gen. Acts, p. 17, appvd. July 1, 1947.)

Preceding Page BLANK - ^{NOT} FILMED

1940 CODE OF ALABAMA
RECOMPILED 1958

SUPERVISION OF PUBLIC LANDS

Title 8
Chapter 5

Sec. 246. LEASE, EXCHANGE OR SALE OF SWAMP AND OVERFLOWED LANDS. - Swamp and overflowed lands may be leased, exchanged or sold by the Director of Conservation with the approval of the trustees of the Alabama state hospitals. (Act No. 581, 1939 Gen. Acts, p. 949, appvd. September 22, 1939.)

Sec. 247. PATENTS TO ISSUE TO PURCHASER OF SWAMP, ETC., LANDS. - All persons purchasing said lands shall be entitled to a patent to said lands and the Governor of Alabama, when presented with the approval of the Director of Conservation and trustees of the Alabama state hospitals, shall cause patents to be issued to those purchasing said lands. Such patent shall vest a fee simple title in the grantee named therein. (Act No. 581, 1939 Gen. Acts, p. 949, appvd. September 22, 1939.)

Sec. 248. CLAIMS OF TITLE TO SWAMP AND OVERFLOWED LANDS. - All persons claiming title to any swamp and overflowed lands in this State under any alleged purchase, or through any chain of title, may submit their claims to the Director of Conservation together with such evidence of purchase or claim, whereupon the Director of Conservation shall have such claim examined and investigated as he may see it, and if it be found that the State has parted with its title to such lands in a legal and effective way, the Director of Conservation shall so determine and shall certify same to the Governor and the trustees of the Alabama state hospitals; but if the Director of Conservation shall determine that the State has not parted with its title to such lands in a legal or effective way, but that equity and justice shall be better served by a settlement with the claimant, he is hereby empowered to settle and adjust such title upon such terms as he may consider just and proper. Upon such adjustment he shall certify such adjustment to the Governor and the trustees of the Alabama state hospitals, and the Governor shall cause patents to be issued to the claimant, under the Seal of the State, to the lands covered by such certificate, and such patent shall vest a fee simple title in the grantee named in such patent. (Act No. 581, 1939 Gen. Acts, p. 949, appvd. September 22, 1939.)

Sec. 249. DISPOSITION OF REVENUE FROM SALE, ETC., OF SWAMP AND OVERFLOWED LANDS. - Any revenue derived from the sale or adjustment of any swamp and overflowed lands as hereinabove provided, shall be paid by the Director of Conservation to the trustees of the Alabama state hospitals. (Act No. 581, 1939 Gen. Acts, p. 949, appvd. September 22, 1939.)

Sec. 250. CORRECTION OF ERROR IN RECORDS PERTAINING TO SCHOOL OR SWAMP AND OVERFLOWED LANDS. - For the purpose of facilitating the management and supervision of school lands and swamp and overflowed lands, upon the submission to the Secretary of State of legal and effective proof of any error or mistake, either of omission or commission, in any of the records in his office which pertain to such lands and which said proof is deemed by the Secretary of State to be adequate and, sufficient, it shall be mandatory upon him to correct such errors or mistakes in his records and make a record of what any such correction consists. (Act No. 581, 1939 Gen. Acts, p. 949, appvd. September 22, 1939.)

Sec. 251. FILE OF PROOFS SUBMITTED FOR CORRECTION OF ERRORS. - The Secretary of State shall maintain a file in his office where he shall keep copies of the proof submitted for the correction of errors or mistakes as provided for in this Chapter. (Act No. 581, 1939 Gen. Acts, p. 949, appvd. September 22, 1939.)

Sec. 252. CERTIFICATION OF CORRECTED RECORDS. - After the correction of any error or mistake in any record which pertains to such lands, the Secretary of State, in any subsequent certification of a corrected record, shall certify the corrected record, which record, so corrected, shall have the same weight and authority as any other certification that the record has been corrected and such correction shall presumptively be properly made. (Act No. 581, 1939 Gen. Acts, p. 949, appvd. September 22, 1939.)

Sec. 252(1). SWAMP AND OVERFLOWED LANDS AND SWAMP AND OVERFLOWED INDEMNITY LANDS PATENTED TO STATE BY FEDERAL GOVERNMENT. - Title to all lands of the swamp and overflowed category or swamp and overflowed indemnity lands, which are, subsequent to the passage of this Section, patented to the State of Alabama by the Federal government and recorded in the Office of the Secretary of State, shall be vested in the Department of Conservation.

The Director of Conservation shall utilize such lands for the purpose or purposes which he deems to be most expedient and beneficial. He is hereby authorized to practice forestry upon such lands and may lease such lands for the exploration or extraction of oil, gas or other minerals. Said land shall be supervised and managed in the same manner

as other lands which are under the supervision of the Department of Conservation are managed.

The Director of Conservation shall have the authority, with the approval of the Governor, to sell, lease, exchange or otherwise dispose of these lands as he may deem advisable.

The revenue derived from the sale, lease, management or utilization of such lands shall be covered into the State Treasury by the Director of Conservation to the credit of either the State Lands Fund, the Forestry Fund or State Park Fund, as the Director deems appropriate and for the best interest of the Department.

This Section is not intended to and does not transfer or affect title to those lands of this category or nature which have been previously patented to the State and which have been recorded in the Office of the Secretary of State. Such titles shall remain vested in the institution or department in which they are at present vested. (Act No. 709, 1951 Gen. Acts, p. 1247, appvd. September 5, 1951.)

Sec. 252(2). REVENUES FROM SALE OR LEASE OF SAND AND GRAVEL. - All revenues, including royalties, derived from the sale of sand and gravel or from leases for the purposes of the removal of sand and gravel from the public water bottoms of the State of Alabama and the lands of the State which are not owned, occupied or held in trust by or assigned or dedicated to any department, agency or institution, shall be paid into the State Treasury to the credit of the State Park Fund of the Department of Conservation, less the cost of administration of such sales or leases. (Act No. 737, 1953 Gen. Acts, p. 1000, appvd. September 17, 1953.)

Sec. 252(3). DIRECTOR TO MAKE SUCH CONTRACTS, PERCENTAGE FOR STATE LANDS DIVISION. - All contracts, leases and agreements for the sale of sand and gravel from said lands and public water bottoms shall be negotiated, consummated and administered by the Director of Conservation, acting through the State Lands Division of the Department of Conservation, which Division shall receive as cost of administration five per cent of all revenues accruing from such sale of sand and gravel or royalties resulting from sand and gravel leases. (Act No. 737, 1953 Gen. Acts, p. 1001, appvd. September 17, 1953.)

Sec. 252(4). REVENUE FROM CONTRACTS, ETC., IN EFFECT SEPTEMBER 17, 1953. - The revenue derived from contracts, leases and agreements now in for the sale of sand and gravel from the lands or water bottoms as specified in Sections 252(2)-252(5) shall be disposed of and distributed as herein provided for, after the date of the passage of said Sections. (Act No. 737, 1953 Gen. Acts, p. 1001, appvd. September 17, 1953.)

1940 CODE OF ALABAMA
RECOMPILED 1958

WATER RESOURCES RESEARCH INSTITUTE

Title 8
Chapter 7

Sec. 266. DECLARATION OF POLICY. - It is the policy and purpose of the Alabama legislature to assure that the State at all times has an abundance of water, both as to its quantity and quality, necessary to meet the requirements of an expanding population and industrial community, and, to help achieve this objective, to stimulate, sponsor, and provide for the conduct of research, investigations and experiments in the field of water and resources as they affect water, and to encourage the training of scientists in fields related to water, by aiding in establishing and supporting an institute or center at Auburn University for the development of a water resources research program.

Sec. 267. BOARD OF TRUSTEES OF AUBURN UNIVERSITY MAY ESTABLISH INSTITUTE; AGENCY TO RECEIVE FEDERAL FUNDS. - The Board of Trustees of Auburn University may establish or provide for establishment of a Water Resources Research Institute or Center, which is hereby designated as the State agency to accept federal funds appropriated or allocated by Congress to the State for the use of water resources research centers established as envisioned by that bill now pending and designated as Senate Bill 2 of the 88th Congress.

Sec. 268. MANAGEMENT AND CONTROL; DUTIES. - The institute or center established under Section 266 shall be subject to the management and control of the Trustees and President of Auburn University, and its programs shall be coordinated with the Geological Survey of Alabama; and it shall be the duty of the institute or center to stimulate, plan and conduct original research, investigations or experiments, of either a basic or practical nature, or both, in relation to water resources - including but not limited to aspects of the hydrological cycle; supply and demand for water; conservation and best use of available supply; methods of increasing such supply; agricultural, biological, ecological, economic, engineering, geographic, industrial, legal, recreational, social, and other aspects of water problems. The results of the research conducted by the institute or center shall be reported or published in such manner and at such times as the director of the institute may consider suitable and appropriate.

Sec. 269. CHAPTER NOT TO PREJUDICE OR RESTRICT PROGRAMS OF OTHER STATE AGENCIES. - This Chapter is intended to supplement and not to prejudice, restrict, or duplicate programs of water resources to research conducted by the Geological Survey of Alabama or the University of Alabama, or to prejudice or restrict the receipt of other Federal, state, or other funds by either of these or other state agencies. (Act No. 149, 1963 Second Extra Session, p. 339, appvd. May 9, 1963.)

1940 CODE OF ALABAMA
RECOMPILED 1958

POWERS, RIGHTS AND DUTIES OF CORPORATIONS

Title 10
Chapter 4

Sec. 77. WATERWORKS COMPANIES MAY ACQUIRE RIGHTS, RIPARIAN RIGHTS, LAND, ETC. - Corporations authorized to construct and operate waterworks for the supplying of cities, villages, towns and their inhabitants, or others living or doing business in the vicinity of them with water, shall have the power, in order to obtain a supply of water for their storage ponds, reservoirs, pipes, and canals, to take over and use, after condemning the same, water of any river or stream or spring or other water source which may be necessary for them to use for such purpose; and may also acquire by condemnation riparian rights and all such lands adjacent to such streams or water sources as shall be necessary to protect and preserve the purity of such supply, and shall also have the power to condemn rights of way and sites of any necessary area for pipe lines, ditches, canals, dams, storage ponds, reservoirs and other necessary purposes for the operation of their waterworks and the collection and distribution of the water supply, and for this purpose said companies may institute ad quod damnum proceedings against the riparian land owners or owner along such river or stream or of other sources or the owner of any lands wherever located desired to be used for any of the purposes above mentioned, in the probate court of the county in which the land on or over which the easements sought to be condemned are situated in accordance with the general laws of this State providing for the condemnation of lands for public purposes. The power of condemnation herein given shall include the right to condemn, wherever necessary, for any of the purposes hereinbefore mentioned, and any yard of curtilage of a dwelling house, garden, stable, lot or barn, or so much thereof as may be necessary; and whenever the ownership of the mineral interest in lands has been severed from the ownership of the surface, and the mining of the minerals would endanger any proposed canal, storage pond or reservoir, said water companies may institute ad quod damnum proceedings against the owner or owners of the minerals situated under the proposed canals, reservoir, or storage ponds in the probate court of the county, in which the lands are situated in accordance with the general laws of the State, condemning said mineral interests or so much thereof as may be required for the support of the surface where said canal, reservoir, or storage pond is to be located. (Act No. 59, 1909 General Acts, p. 60, appvd. August 20, 1909.)

Sec. 78. JOINT OR SEVERAL PROCEEDINGS. - In proceedings to condemn under the preceding Section, any number of or all the riparian proprietors

or other owners along said river, stream, or other water source in the same county, may be joined in one proceeding or be proceeded against separately. (Act No. 59, 1909 General Acts, p. 60, appvd. August 20, 1909.)

Sec. 80. WATER SOURCE NOT TWICE CONDEMNED. - No corporation shall have the right to condemn the water of any stream, spring, or other water source which is the property of another water company supplying with water a city, village, or town, or the inhabitants thereof. (Act No. 59, 1909 General Acts, p. 60, appvd. August 20, 1909.)

Sec. 82. RAILROADS, MINING CORPORATIONS, ETC., MAY ENTER ON LAND TO MAKE SURVEY, EXAMINATIONS FOR PROPOSED LINES, WORKS, ETC. - Railroads, street railroads, and mining and manufacturing, power, and quarrying, telegraph and telephone, and other corporations having rights and powers to condemn, may cause such examinations and surveys for their proposed railroads, or lines, as may be necessary to the selection of the most advantageous routes and sites, and for such purpose may, by their officers, agents, and servants, enter upon the lands and waters of any person, but subject to liability for all damages done thereto, and may, in the construction of their lines or sites, cross navigable streams, but must not impede the navigation thereof; may use, cross, or change public roads, when necessary, in the construction of their railways, switches, branches, lines, or buildings, and must place the public road so crossed, used, or changed, in condition satisfactory to the county authorities having the control thereof, but where practicable the railroads must go over or under the public roadway, or railroad track, and may also cross or intersect with any other railroad or street railway, and if such crossing or intersection cannot be made by contract or agreement, may acquire the rights thereto by condemnation in the mode provided by law. (Act No. 59, 1909 General Acts, p. 60, appvd. August 20, 1909.)

Sec. 83. RAILROADS TO ACQUIRE AND OPERATE STEAMBOATS, ETC. - Railroad companies, and mining, manufacturing, and quarrying companies may contract, purchase, or otherwise acquire, own, operate, and maintain steamboats, barges, ships, and other vessels for transportation of freight and passengers on the navigable waters of this State, or any other state or foreign country and on the seas; and railroad companies may purchase or otherwise acquire, own, maintain and operate motor vehicles for the transportation of persons or property, or both, upon the highways of this State; and may purchase or otherwise acquire, own, maintain and operate aeroplanes for the transportation of persons or property, or both, in the air, and may purchase, lease or otherwise acquire and own the property, rights and franchises of any individual, firm, partnership, or other association of persons, or corporation, engaged in the transportation of persons or property, or both, by motor vehicle on the highways or by aeroplanes

in the air; and may subscribe to and may acquire and own the capital stock of any such corporation, and may enter into any agreement or arrangement, not inconsistent with law, with any individual, firm, partnership, or other association of persons, or corporation, engaged in, or authorized to engage in, any of said methods of transportation; provided, however, that any railroad companies exercising in this State the powers herein granted shall, in their operation of motor vehicles, be subject to all the laws of this State applicable to or authorizing, regulating and governing such motor carriers and their business, or prescribing the condition under which operators of motor vehicles may operate such vehicles on the highways of this State. And all railroad companies organized under the laws of other states, but authorized to do business in this State, may exercise in this State the powers hereinabove granted; subject, however, to the limitations hereinabove set forth; provided that before operating any such motor vehicles upon the highways of this State, such railroad companies must procure a certificate of convenience and necessity covering such operations. (Act No. 646, 1939 General Acts, p. 1019, appvd. July 10, 1940.)

Sec. 89. RIGHTS OF WAY BY MINING CORPORATION TO MAKE CONNECTIONS OF THEIR WORKS WITH PUBLIC HIGHWAYS, ETC., ACQUIRED BY CONDEMNATION, ETC. - Mining, manufacturing, and quarrying corporations may construct and operate to and from their mines, furnaces, mills, factories, quarries or other works, railways, tramways, canals, tunnels, underground passages, or roads, whereby connections may be made to and from their principal places of business, their mines, furnaces, mills, quarries, or other works, and any public highways, turnpike, macadamized, plank, or other graded road or railroad, or navigable waters, or to or with their mines, ore beds, coking or cooling grounds, or timber lands, or canals, or aqueducts, to or from their mills or factories, furnaces, or quarries, or other works or any water or watercourses, and may transport as common carriers freight and passengers on any railroad or other roads, or any canals or aqueducts, constructed or purchased by them, taking reasonable compensation therefor. (Act No. 324, 1911 General Acts, p. 576, appvd. April 21, 1911.)

preceding page BLANK - NOT FILMED

1940 CODE OF ALABAMA
RECOMPILED 1958

WATER CONSERVATION AND IRRIGATION AGENCIES

Title 12
Chapter 23A

Sec. 297(1). AUTHORITY TO ESTABLISH STATE DEVELOPMENT AGENCY. - In the interest of water conservation and land irrigation in that portion of Alabama known as the State of Alabama and for purposes of cooperation with any water authority or agency or any river area development authority or agency heretofore or hereafter created, there is hereby authorized and shall be established as hereinafter provided a state development agency constituting an irrigation district or districts for the State of Alabama. The agency, when incorporated in accordance herewith, shall be an instrumentality of the State of Alabama. (Act No. 827, 1965 General Acts, page 1549, appvd. September 2, 1965.)

Sec. 297(2). RESOLUTION DECLARING NEED FOR INCORPORATION OF WATER CONSERVATION AND IRRIGATION AGENCY; MEMBERSHIP OF CORPORATION; ELECTION OF BOARD OF DIRECTORS; TERMS; VACANCIES. - The organization and establishment of the agency shall be as follows:

(a) The Court of County Commissioners or other like county governing body of any county or counties lying within the State of Alabama which may elect to come within the provisions of this Chapter shall indicate its desire to participate therein by the adoption of an appropriate resolution declaring the need for the incorporation of a Water Conservation and Irrigation Agency stating its intention to give financial assistance to projects of such agency, and stating its desire to become a part thereof.

(b) Membership of the corporation shall consist of title holders to the land irrigated or proposed to be irrigated within the boundaries of the irrigation district or districts to be established and such member water users shall elect by a majority vote a Board of Directors to be composed of nine members. Members of the Board of Directors shall be selected from persons residing in and holding title to lands located within the irrigation district or districts or areas proposed for irrigation, and who are persons active in municipal, industrial, agricultural, commercial or citizen organizations engaged in promoting comprehensive and unified development of the resources of the State of Alabama as a basis for its general economic growth. Three such members shall be elected for terms of two years, three for terms of four years, and three for terms of six years. Thereafter all members shall be elected for terms of six years,

but in all events such members shall continue in office until their successors are elected and qualified. Vacancies occurring on the Board shall be filled in the same manner as original appointments. Board members shall be eligible to succeed themselves. (Act No. 827, 1965 General Acts, page 1549, appvd. September 2, 1965.)

Sec. 297(5). POWERS OF CORPORATION. - The corporation organized and established under this Chapter shall have the following powers, subject only to the limitations described hereinafter:

- (a) To adopt by-laws for the regulation of its affairs and the conduct of its business;
- (b) To adopt, use and alter a corporate seal which shall be judicially noticed;
- (c) To maintain a principal office at a place named in its papers of incorporation and a sub-office or sub-officers at such place as it may deem necessary;
- (d) To enter into such contracts, and cooperative agreements with Federal, state and local governments, with agencies of such governments, with private individuals, corporations, and associations, and other organizations to do any act necessary or incidental to the performance of its duties and execution of its powers under this Chapter;
- (e) To sue and be sued in its own name;
- (f) To enter into agreements with the United States government or its agencies or political subdivisions thereof, municipalities, and public corporations concerning the sale and use of the water impounded by the United States government, management of the project, collection of charges for water issued to users, and repayment costs of the project construction costs;
- (g) To acquire, hold, and dispose of real and personal property or any interests therein;
- (h) To provide a water supply by impounding a stream or by development and use of wells by either construction, lease, or purchase;
- (i) To develop and operate an irrigation project, including the facilities necessary thereto, either by construction, lease or purchase;
- (j) To provide for the control of floods by impounding surplus water or by other means to the extent that such work is economically feasible and desirable and not opposed to the need of water for irrigation;

(k) To provide for multiple purpose developments where such are feasible and not in conflict with need of water for irrigation use, including developments for water power and water for municipal and industrial uses;

(l) To establish rates for water sold to irrigators, municipalities, industries, and other customers, and authorize collections therefor, such rates to be determined on the basis of the revenue required to operate and maintain the development and for amortization of bonded indebtedness; or for repayment to the United States Government the costs of the project when built and constructed with Federal funds.

(m) To tax or assess the water user members' land for water charges which include operation and maintenance annual costs and annual construction costs, which tax or assessment shall be equally prorated on the amount of water used and acreage irrigated or scheduled for irrigation within the irrigation district;

(n) To use such means as are necessary to control soil erosion and silt wherever project facility or repayment of construction cost is endangered;

(o) To refuse to deliver water to any water user member when delinquent in his project account, or who refuses or fails to comply with rules and regulations of the irrigation project;

(p) To issue revenue bonds and refunding bonds;

(q) To exercise the right of eminent domain in the manner provided in Title 19, Code of Alabama 1940, as amended; nothing in this Chapter shall be construed to authorize the acquisition by eminent domain of any real property or rights owned or controlled by railroads or utilities, both public and private.

(r) To accept gifts from any source whatsoever. (Act No. 827, 1965 General Acts, p. 1549, appvd. September 2, 1965.)

Sec. 297(6). APPLICATION FOR CONSTRUCTION PERMIT; DUTIES OF DIRECTOR OF DEPARTMENT OF CONSERVATION; NONCOMPLIANCE WITH PERMIT. - Before any construction work on any project may be undertaken by any corporation created under the terms of this Chapter, said corporation shall apply to the Director of the State Department of Conservation for a permit authorizing the proposed development. The corporation shall furnish with the application for permit the following information: preliminary plans consisting of maps, plats, plans and drawings, showing the general features of the development or developments it proposed to make, with amount of water which will be required as related to the naturally available supply, the land areas, and, if a multiple purpose project, the other clients which will benefit from the development, and such other details as may be needed to make

clear the extent and scope of the project. The said Director shall make or have made a study of the water needs of the project as compared to the available supply and as related to the existing or anticipated needs of other water users in the basin who may be affected by the proposed development, making use of such studies or open public hearings as may, in his judgment, be required. Based on his findings, authority to develop as proposed or as modified for the purpose of protecting and conserving water supplies for others shall be granted. It shall further be the duty of the said Director to systematically check into the construction and operation of projects for which permits have been granted to ascertain if the corporation is complying with the terms and conditions of the permit. In the event the corporation is found not to be complying with the terms and conditions of the permit issued by said Director, said Director forthwith shall notify the corporation in writing in what manner the terms are being violated and said corporation shall have thirty days after receipt of said notice to rectify or correct whatever violations are being committed. In the event corrections are not made at the end of the thirty day period or any extension of time which the said Director shall have the authority to give, the Director shall make application in proper form to the Circuit Court in the county or counties in which such violation is located for a court order making mandatory the correction which he deems necessary. (Act No. 827, 1965 General Acts, p. 1549, appvd. September 2, 1965.)

Sec. 297(7). WHERE OTHER STATE AGENCY GIVEN RESPONSIBILITY OF DEPARTMENT OF CONSERVATION. - In the event that a state agency other than the State Department of Conservation may hereafter be charged with such responsibility as is in this Chapter charged to the State Department of Conservation, the terms "Director", "said Director", or "Director of the State Department of Conservation" wherever used in this Chapter shall be construed to mean the executive head of the state agency so charged. Provided further, that in the event that any other state officer shall have been appointed and charged with the specific duty of assisting in formulating plans for the establishment of irrigation districts prior to their incorporation and with the supervision of all work and efforts in connection therewith, such officer shall assist in the preparation of the preliminary plans required to be submitted in Section 279(6) of this Chapter. (Act No. 827, 1965 General Acts, p. 1549, appvd. September 2, 1965.)

1940 CODE OF ALABAMA
RECOMPILED 1958

ERCTION OF DAMS FOR MILLS, GINS OR FACTORIES

Title 19
Chapter 3

Sec. 34. DAMS FOR WATER MILLS, GINS, PLANTS FOR GENERATING ELECTRICITY OR FACTORIES; BY WHOM ERECTED. - A dam for any grist mill, saw mill, gin, factory, or plant to generate electricity by water power to be operated for the public, may be erected across any water course, not a navigable stream, by the owner in fee of the land on both sides of the stream, or on one side at the place where the dam is proposed to be erected, by proceeding as in this Chapter provided. (Act No. 55, Acts 1860, appvd. February 24, 1860.)

Sec. 35. APPLICATION TO COURT OF PROBATE. - For authority to erect such dam, application in writing, verified by affidavit, must be made to the Probate Court of the county in which it is proposed to erect the mill, gin, factory, or electric light plants, if by the owner of the land on both sides of the stream, or if by the owner of the land on one side only, to the Court of Probate of the county in which the land on the opposite side of the stream, abutting the proposed site of the dam, lies. (Section passed prior to publication of Code of Alabama, 1867.)

Sec. 36. CONTENTS OF SUCH APPLICATION. - Such application must set forth the right of the applicant to make the same, the purpose for which the dam is to be erected, a description of the land by sectional divisions and subdivisions, township and range, the name of the water course, if it has a name, the side on which the mill, gin, or factory is to be erected, and the proposed height of the dam; and if the application is made by the owner of the land on one side only, he shall also set forth therein the name of the owner of the land on the opposite side on which the proposed dam is to abut, and his residence, if known, and whether such owner is a minor or of full age; and if such owner of the land on the opposite side is of unsound mind, that fact must also be stated. (Section passed prior to Code of Alabama, 1867.)

Sec. 37. NOTICE TO OWNER OF OPPOSITE LAND. - If application is filed by the owner of the land on one side of a stream only, notice must be given to the owner of the land on the opposite side by serving him in the same manner as is provided for service of owners in Section 4 of this Title, and if the owner be a minor or person of unsound mind, a guardian ad litem

must be appointed as provided in Section 5 of this Title. (Section passed prior to Code of Alabama, 1867.)

Sec. 38. ON FILING APPLICATION, WRIT OF AD QUOD DAMNUM ISSUES. - On the filing of such application, the Judge of Probate must issue to the Sheriff, a writ, setting forth the substantial averments contained in the application, the name of the applicant, and the place where it is proposed to erect the dam, and commanding the Sheriff to summon seven disinterested freeholders of the county to meet at the place where the dam is to be erected, on a day to be specified in the writ, not less than fifteen, nor more than thirty days after the filing of the application, and then and there to inquire touching the matter contained therein. (Section passed prior to Code of Alabama, 1867.)

Sec. 39. MODE OF EXECUTING WRIT; CHARGE TO AND DUTIES OF JURY. - The Sheriff and the jury must attend on the day appointed; and after the jury are sworn by the Sheriff to discharge their duties fairly and to the best of their ability, they must be charged by him:

To examine the land above and below belonging to others, which may probably be overflowed or injured, and to ascertain and assess the damages resulting from the erection of such dam to the several owners of such lands.

To ascertain whether the residence of any of such owners, or the outhouses, inclosures, gardens, or orchards, thereto immediately belonging, will be overflowed.

To ascertain whether the health of the neighborhood will probably be endangered.

To ascertain whether any other mill, gin, factory, or waterworks will be overflowed. (Section passed prior to Code of Alabama, 1867.)

Sec. 40. VALUE OF ONE ACRE OF LAND ON OPPOSITE SIDE TO BE ASSESSED. - If the applicant is not the owner of the land on both sides of the stream, the jury must also be charged to ascertain and assess the value of one acre of land on the opposite side to include the place where the proposed dam would abut and to locate and circumscribe the same by metes and bounds, having a due regard to the interests of all parties. (Section passed prior to Code of Alabama, 1867.)

Sec. 41. INQUEST MADE, SIGNED, AND RETURNED. - The inquest of the jury must be reduced to writing, signed by a majority of the, and delivered to the Sheriff, and by him returned in five days thereafter to the Court of Probate. (Section passed prior to Code of Alabama, 1867.)

Sec. 42. PARTIES SUMMONED TO SHOW CAUSE AGAINST INQUEST. - On the return of the inquest, summons must issue from the Court of Probate to the owner of the acre of land, if the same is assessed by the jury, and also the several owners of the land found by the inquest to be liable to damage, to appear before him on a day named in the summons, and show cause, if any they have, why the applicant should not have permission to erect his dam. (Section passed prior to Code of Alabama, 1867.)

Sec. 43. TEN DAYS' NOTICE TO BE GIVEN TO OWNERS OF LAND; HOW GIVEN. - Ten days' notice to be given to the several owners of such land, to show cause, if any they have, against such application, by personal service, if to be found in the county, or if not, by posting up a copy of such notice at a conspicuous place on the several tracts of the owners who cannot be so found. (Section passed prior to Code of Alabama, 1867.)

Sec. 44. WHEN APPLICATION REJECTED; WHEN GRANTED. - If, on the day appointed to show cause, or any other day to which the matter may be continued, it appears to the court from the inquest, or from evidence introduced, that the residence of any owner, or the outhouses, inclosures, garden or orchard, immediately belonging thereto, will probably be overflowed, or that the health of the neighborhood will probably be endangered, or that any other mill, gin, factory, or waterworks will probably be overflowed, the court must not grant the application; but if such results will not probably ensue, the application must be granted. (Section passed prior to Code of Alabama, 1867.)

Sec. 45. PAYMENT OF ASSESSMENT. - If the application is granted, the applicant must, within three months thereafter, pay to the several owners, or to the Judge of Probate for their use, the sums severally assessed; and a failure to make payment within such time, operates a revocation of the grant. (Section passed prior to Code of Alabama, 1867.)

Sec. 46. CONDITIONAL FEE VESTS ON PAYMENT OF ASSESSMENT. - On making such payment, the applicant is vested with a qualified estate in fee to the acre of land located and circumscribed by the jury, to become absolute on performance of the following conditions.

That the dam or mill, gin or factory, be commenced within one and finished within three years from the date of the grant.

That whenever the dam or mill, gin or factory, is destroyed or materially impaired, the same must be rebuilt or repaired within three years thereafter; but if the owner of such dam is an infant or person of unsound mind, he is allowed the same length of time, after the removal of such disability, to commence, finish, repair or rebuild. (Section passed prior to Code of Alabama, 1867.)

Sec. 47. ON BREACH OF CONDITION, LAND REVERTS. - On failure to comply with such conditions, the land reverts to its former owner, or his heirs. (Section passed prior to Code of Alabama, 1867.)

Sec. 48. PROCEEDINGS WHEN CANAL THROUGH ANOTHER'S LAND IS NECESSARY. - When such lands joins other lands, and it is necessary for the erection of the mill, gin, or factory, to dig a ditch or canal through such other lands, the application must be made to the Court of Probate of the county in which the lands, through which the ditch or canal is proposed to be dug, lie; and the writ must be obtained, inquest held, notice given, inquest returned, the owners of other lands summoned to show cause, the application granted or refused, and damages paid, the same as in other cases provided for in this Chapter. (Section passed prior to Code of Alabama, 1867.)

Sec. 49. AUTHORITY TO RAISE DAM HIGHER. - An owner or proprietor of any dam erected under this Chapter may raise the same on application to the Court of Probate; and on such application, the same proceedings must be had as on the first application. (Section passed prior to Code of Alabama, 1867.)

Sec. 50. WHO MAY CONTEST APPLICATION. - In all applications under this Chapter, any person making affidavit that he is interested against the same, and giving security for the costs if he fails to defeat such application, must, at any time before such application is granted, be permitted to make himself a party, and to contest the same. (Section passed prior to Code of Alabama, 1867.)

Sec. 51. LIABILITY FOR BUILDING OR RAISING DAM WITHOUT AUTHORITY. - Any person who builds or raises a dam or other obstruction across any water course, except as authorized by law, and thereby works any injury to any other person, by overflowing his land, or in any other way, is liable to such person for double damages for such injury; and he may, if the same is a nuisance to the neighborhood, be prosecuted therefor. (Section passed prior to Code of Alabama, 1867.)

Sec. 52. DEPUTY SHERIFFS MAY ACT. - The duties imposed on the Sheriff under this Chapter may be performed by Deputy. (Section passed prior to Code of Alabama, 1867.)

Sec. 54. LANDOWNER ENTITLED TO APPEAL TO CIRCUIT COURT. - From any assessment of damages made or had under this Chapter, the landowner, if dissatisfied, is entitled to an appeal, as matter of right, to the Circuit Court of the county, and on such appeal to a trial de novo by jury; such

appeal to be taken within twenty days after the application is granted, on giving security for the costs of the appeal, to be approved by the Judge of Probate; and on giving such security, the Judge of Probate must file in the Office of the Clerk of the Circuit Court a full and complete transcript of all the proceedings, including the inquest of the jury, within ten days after such appeal is taken. (Section passed prior to Code of Alabama, 1867.)

Sec. 55. JURISDICTION AND PROCEDURE. - The right hereby conferred shall be exercised by application to the Probate Court of the county in which the lands over which such right-of-way is desired, or a material portion thereof are situated, and the same proceedings shall be had as in cases of condemnation of lands for public uses as provided by Chapter 1 of this Title. (Act No. 475, 1927 General Acts, p. 521, appvd. September 6, 1927.)

Preceding Page BLANK - NOT FILMED

1940 CODE OF ALABAMA
RECOMPILED 1958

WATER WORKS AND WATER SUPPLIES

Title 22
Chapter 3

Sec. 117. STATE BOARD OF HEALTH HAS SUPERVISION AND CONTROL OVER WATER SUPPLIES AND WATERWORKS OF STATE. - The State Board of Health shall have general supervision and control over all water supplies and waterworks in the State insofar as purity, potability, wholesomeness, and physical quality of waters furnished may affect the public health or comfort, and shall from time to time, by its employes or agents, examine and investigate the sources of supply of waterworks systems and the method of filtering and treating water and delivering the same to consumers. When requested, said Board shall consult with and advise the municipal authorities and other persons having, or intending to have, waterworks installed, enlarged or improved as to the most appropriate source of water supply and the best method of assuring its purity. (Act No. 658, 1919 General Acts, p. 909, appvd. September 29, 1919.)

Sec. 132. DEPOSITING DEAD ANIMALS AND FOWL IN RUNNING STREAMS. - Any person who deposits the body of a dead animal or fowl in any running stream must, on conviction, be fined ten dollars; and one-half of the fine must go to the informer. Justices and constables are especially charged with the enforcement of this Section. (Act No. 658, 1919 General Acts, p. 909, appvd. September 29, 1919.)

Sec. 133. POLLUTING WATER SUPPLY OF TOWN OR CITY. - It shall be unlawful for any person to knowingly deposit any dead animal or nauseous substance in any source, standpipe, or reservoir, from which water is supplied to any city or town of this State, or in any private well, spring, reservoir, tank, vessel, or receptacle. Any person violating the provisions of this Section shall be guilty of a misdemeanor, and, upon conviction, shall be punished by a fine not exceeding five hundred dollars, and may be sentenced to hard labor for the county not exceeding one year. (Act No. 658, 1919 General Acts, p. 909, appvd. September 29, 1919.)

Sec. 134. DRAINING AND IMPOUNDING WATER IN THE CONSTRUCTION OF RAILROADS, OR PUBLIC HIGHWAYS, OR CONSTRUCTION WORKS. - Any person, firm or corporation engaged in the construction of any railroad, public highways, or other construction work in Alabama, shall drain all borrow pits, cuts and fills likely to impound water which shall be dangerous to the public

health, and any person, firm or corporation failing to perform the duty imposed in this Section, shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be fined not less than fifty dollars, nor more than five hundred dollars. (Act No. 658, 1919 General Acts, p. 909, appvd. September 29, 1919.)

Sec. 135. SUPPLYING IMPURE OR POLLUTED WATER. - Any person, firm or corporation, who shall negligently or knowingly furnish or supply water intended to be used for human consumption or for domestic uses, which is impure, unpalatable, unwholesome, polluted or dangerous to health; or water which has been so declared by the State Board of Health to be impure, unwholesome, unpalatable, polluted, or dangerous to health, shall be guilty of a misdemeanor, and, on conviction, shall be punished by a fine of not less than one hundred nor more than one thousand dollars; and in addition thereto may, in the discretion of the court trying the case, be sentenced to hard labor for the county for a period of not more than six months. (Act No. 658, 1919 General Acts, p. 909, appvd. September 29, 1919.)

Sec. 139. PENALTY FOR VIOLATIONS OF CHAPTER; HOW RECOVERED. - Any person, firm, corporation, public utility, municipality, or other body or institution, or officer, employe or agent thereof, upon whom the duty to act is cast, who shall violate any provision of this Chapter or who shall fail to obey, observe, or comply with any direction, order requirement, or demand, or any part or provision thereof, of the State Board of Health or who procures, aids or abets, any such person, firm, corporation, public utility, municipality or other body or institution or employe or agent thereof in any failure to obey or comply with the provisions of this Chapter or the orders of the State Board of Health as provided in this Chapter shall become liable for and forfeit to the State of Alabama the penal sum of not more than one thousand dollars for each separate offense. The continued existence of any violation of this Section for each and every day beyond the time stipulated for compliance with any of its provisions or of any order of the State Board of Health as provided herein shall constitute a separate and distinct offense. All such penalties are to be recovered by the State in civil action brought by the State of Alabama and such penalties when collected shall be paid into the general fund of the State Treasury. (Act No. 658, 1919 General Acts, p. 909, appvd. September 29, 1919.)

1940 CODE OF ALABAMA
RECOMPILED 1958

WATER IMPROVEMENT COMMISSION

Title 22
Chapter 3A

Sec. 140(6). PURPOSE. - The improvement and conservation of the ground and surface waters of the State of Alabama is of utmost importance. The existing water conditions of the State and the right of municipalities, industries and individuals to the reasonable use of such water so as to promote the continued growth and development of the State, in industry, agriculture, health, recreation and conservation of natural resources is recognized. (Act No. 574, 1965 General Acts, p. 1058, effective November 26, 1965.)

Sec. 140(7). DEFINITIONS. - When used in this Chapter the terms defined shall have the meanings here ascribed to them unless it clearly appears from the context that some other meaning is indicated.

"Commission" means the Water Improvement Commission; and "member" means a member of said Commission.

"Waters" means all waters of any river, stream, watercourse, pond, lake, coastal, ground or surface water, wholly or partially within the State.

"Sewage" means water-carried human wastes from residences, buildings, industrial establishments or other places, together with such ground, surface, storm or other waters as may be present.

"Industrial wastes" means liquid or other wastes resulting from any process of industry, manufacture, trade or business or from the development of natural resources.

"Other wastes" means decayed wood, sawdust, shavings, bark, lime, refuse, ashes, offal, oil, tar, chemicals and all other substances, except industrial wastes and sewage, which may cause pollution of any surface waters of the State.

"Pollution" means the discharge or deposit of sewage, industrial wastes, or other wastes in such condition, manner or quantity as may cause ground or surface water to be contaminated, unclean, or impure to such an extent as to make said waters detrimental to the public health or the health of animals, wildlife, fish, marine life or aquatic life; unsuitable with

reasonable treatment for use as present or possible future sources of public water supply; or unsuitable for recreational, commercial, industrial, agricultural, or other reasonable uses.

"Person" means any and all persons, natural or artificial, including any individual, firm or association and any municipal or private corporation organized or existing under the laws of this or any other state or county. (Act No. 574, 1965 General Acts, p. 1058, effective November 26, 1965.)

Sec. 140(8). COMMISSION CREATED: MEMBERS; TERMS; APPOINTMENTS; VACANCIES; COMPENSATION AND EXPENSES; MEETINGS; RECORD OF PROCEEDINGS; ADMINISTRATIVE AND DISBURSING AGENT; EXECUTIVE COMMITTEE; QUORUM. - (a) There is hereby created a Water Improvement Commission consisting of 14 members as follows: the State Health Officer, who shall be the Chairman of the Commission; the Director of the Department of Conservation, who shall be Vice-Chairman; the Commissioner of the Department of Agriculture and Industries; the State Geologist; one member representative of municipal government, one member representative of county government; two members representative of wildlife conservation; and six members respectively of the following six industries of the State, viz.: mining, textiles, chemicals, lumbering, paper, metals.

(b) The four ex-officio members shall hold office as such throughout their respective terms and until the appointment and qualification of their successors as such. The remaining ten members of the Commission shall be appointed by the Governor and shall hold office for a term of six years. The member representative of a municipal government shall be appointed from three nominees made by Alabama League of Municipalities; the member representative of county government shall be appointed from three nominees made by Association of County Commissioners of Alabama, the two members representative of wildlife conservation shall be appointed from five nominees made by Alabama Wildlife Federation; the members representative of mining, textiles, chemical, lumbering, paper and metals shall be appointed from three nominees for each of said industries, such nominations to be made by Alabama Mining Institute for mining; Alabama Textile Manufacturers Association for textiles; Alabama State Chamber of Commerce for chemicals; Alabama Forest Products Association for lumbering; Associated Industries of Alabama for paper; and Alabama Mining Institute for metals. In the event any such organization shall fail to make such nominations within sixty days after receipt of notice from the Chairman of the Commission, the Governor shall make any such appointment of his own discretion. The Technical Secretary of the Commission shall report the absence of any representative from three consecutive meetings to the Commission. The Commission, by majority vote, may declare the position of such absentee representative vacant. If the Commission shall so vote, the Technical Secretary shall forthwith notify the agency of the Commission's action and such agency shall, within sixty days, send to the Governor the names of three nominees and the appointment of a successor.

shall be made by the Governor in the manner provided for in this Section.

(c) Upon the death, resignation or removal of any appointed member, the Governor shall, upon certification thereof to him by the Commission, appoint some qualified person to fill the vacancy for the unexpired term of said member, in the manner provided for in subsection (b).

The term of office of every member shall be from the date of his appointment and qualification until the appointment and qualification of his successor. All members shall have been residents of the State of Alabama for two or more years prior to their appointment. The Chief Sanitary Engineer Division of the Bureau of Sanitation, of the Department of Public Health, shall serve as technical secretary to the Commission.

(d) No salary or compensation shall be allowed any member of the Commission for services thereon; this shall not, however, be construed to affect in any way the regular compensation of officials of state departments, who by virtue of their position are members of the Commission, services on the Commission being considered a part of the duties of such officials as representative of the respective departments. Actual and necessary travel subsistence, and other expenses incurred by members in the discharge of their official duties as members of the Commission and by direction or request of the Commission, shall be paid as provided by law from any funds which are or may become available for the purpose of this Chapter.

(e) The Commission shall meet regularly in April and October of each year and special meetings may be held at any time or place determined by the Commission or upon call of the Chairman or upon written request of any five members to take up any matters within its jurisdiction, provided that all members shall be notified of the time and place of any regular or special meeting at least ten days in advance of such meetings.

(f) The Commission shall keep a complete and accurate record of the proceedings of all its meetings, a copy of which shall be kept on file in the Office of the Technical Secretary and open to public inspection.

(g) The State Department of Public Health shall be the administrative and disbursing agent for the Commission within the limits of appropriations and funds, which are or which may become available from any source for this purpose.

(h) There is hereby created an Executive Committee of the Water Improvement Commission consisting of five of its members as follows: the State Health Office who shall be the Chairman of the Executive Committee; the Director of the Department of Conservation; the member representative of municipal government; a member representative of industry; and a member representative of wildlife conservation. The member representative of industry and the member representative of wildlife conservation shall be

appointed by the Chairman and shall serve at the pleasure of the Chairman. The Executive Committee may meet at any time or place upon call by the Chairman and, when the full Commission is not assembled, said Executive Committee may act for the full Commission and shall possess all such powers and jurisdiction of said Commission as may be delegated to it by said Commission provided, however, that every act or order of the Executive Committee shall be promptly recorded in writing to each member of the Commission and shall become final and subject to review as the act or order of the Commission pursuant to subsections (m) and (n) of Section 140(9) of this Chapter seven days after the mailing of such report of the Executive Committee unless within said seven-day period any three or more members of the Commission shall request in writing to the Chairman of the Commission that such act or order of the Executive Committee be submitted to a meeting of the Commission for its review, in which event the Chairman shall submit the matter de novo to a meeting of the Commission, provided, that orders issued by the Executive Committee shall become effective immediately upon issuance and shall continue in effect in accordance with their terms unless changed by review of the Commission.

(i) Eight members of the Commission shall constitute a quorum for the transaction of Commission business.

(j) The incumbent members of the Water Improvement Commission as established under Sections 140(1) to 140(5) of this Title, as amended /repealed by Section 140(11) of this Chapter/, together with the additional member representative of wildlife conservation as herein provided, and except for the representatives of the University of Alabama and Auburn University, which are deleted, shall constitute the membership of the Commission provided for in this Chapter and shall continue to serve until their successors are appointed as provided in subsections (b) or (c).
(Act No. 574, 1965 Gen. Acts, p. 1058, effective November 26, 1965.)

Sec. 140(9). POWERS AND DUTIES OF COMMISSION; REVIEW AND ENFORCEMENT OF ORDERS. - It shall be the duty of the Commission to control pollution in the waters of the State and it shall specifically have the following powers:

(a) To study and investigate all problems concerned with the improvement and conservation of the waters of the State. To conduct independently and in cooperation with others, studies, investigation, research, and to prepare, or in cooperation with others prepare, a program or programs, any or all of which shall pertain to the purity and conservation of the waters of the State of Alabama or to the treatment and disposal of sewage, industrial wastes, or other wastes which may be the causes of pollution, which studies, investigations, research and program or programs shall be intended to result in the reduction of pollution of the waters of the State of Alabama according to the conditions and particular circumstances existing in the various communities throughout the State of Alabama; to propose remedial measures insofar as practical means

are available for abatement of such pollution. To this end the Commission may cooperate with any public agency, including Federal agencies, or with any private agency in the conduct of such experiments, investigations and research, and may receive in behalf of the State of Alabama, any moneys which any such agency may contribute as its share of the cost under any such cooperative arrangement. Provided that such moneys shall be used only for the purposes for which they are contributed, and any unexpected balance remaining after the conclusion of the experiments, investigation and research, or other uses for which such moneys were granted or donated, shall remain to the credit of the Water Improvement Commission fund unless the terms of such grant, gift, or donation specifically require the return of any unexpended balance.

(b) It shall be the duty of the Commission to conduct surveys with respect to the pollution of any streams in the State either navigable or not navigable; to establish criteria standards for recognized limits of pollution; and, independently or in cooperation with other agencies, both public and private, to promote, through education and demonstration, water conservation and the abatement of stream pollution.

(c) Every person, municipality, industrial or other establishment, shall furnish to the Commission within a specified time but not less than ninety days after written request therefor, all pertinent information within their knowledge required by it in the discharge of its duties under this Chapter; provided, however, that no person or industry shall be required to disclose any secret formulae, processes or methods. The fees of witnesses for attendance and travel shall be the same as fees of witnesses before the courts of record and shall be paid from the appropriation for the expenses of the Commission. Any judge of a court of record, either in term time, or vacation, upon application of the Chairman or Acting Chairman of the Commission shall compel the attendance of witnesses, the production of books and papers, and the giving of testimony before the Commission or any agent thereof by attachment, or contempt or otherwise, in the same manner as the production of evidence shall be compelled before said court. The Chairman of the Commission shall require the attendance of employees who are needed as witnesses without subpoena. Any member of the Commission or its employees or agents may enter any property, or any industrial or other establishment at any reasonable time for the purpose of collecting such information and no owner or official in charge shall refuse to admit such member, employee or agent for all purposes necessary to the discharge of his official duty.

(d) It shall be the duty of the Commission to render a formal report biennially to the Governor and each succeeding legislature in regular session assembled, of its activities and progress, and including any recommendations for amendment to this Chapter.

(e) It shall be the further duty of the Commission to extend its cooperation and to advise with industries and municipalities relative to the control of waste and other deleterious matter of pollutive nature

and to make available to industries and municipalities the benefits of its studies and findings.

(f) It shall be the duty of the Commission to exercise general supervision over the administration and enforcement of all laws relating to pollution of the waters of the State. Whenever the Commission determines that any person is violating or is about to violate any of the provisions of this Chapter or any rule or order of the Commission promulgated thereunder, the Commission may notify such person of such determination of the Commission. The notice may be served by registered mail or by an officer empowered to serve process under existing laws or by an officer or agent of the Commission. Within such time as may be specified in such notice, such person shall file with the Commission a full report, showing steps that have been taken and are being taken to control such discharge or pollution. Thereupon, the Commission may make such orders as in its opinion are deemed reasonable.

(g) It shall be the duty of the Commission, after notice as hereinafter provided to establish such standards of quality for any waters in relation to their reasonable and necessary use as shall be in the public interest, recognizing that because of variable factors and varied use of waters, no single standards of treatment and no single standard of quality are practical, and that the degree of treatment of sewage and industrial waste must take into account the present and future uses, and such general policies relating to existing or proposed future pollution as it shall deem necessary to accomplish the purposes of this Chapter, and to modify, amend or cancel the same. Any provision of law to the contrary notwithstanding, the quantity of pollution existing in an effluent at any time shall be subject to the control of the Commission if it creates a health hazard. Prior to establishing standards as herein provided, the Commission shall cause to be published in a newspaper published in and of general circulation in each county within which any such waters, wholly or partially, are located, a notice in substantially the following forms:

NOTICE

Of Water Improvement Commission

Notice is hereby given that a meeting of the Water Improvement Commission of the State of Alabama will be held on the day of, 19...., at for the purpose of establishing standards of quality in those certain waters in the county or counties of Alabama, described as follows(Describe Waters) Anyone desiring to be heard may appear at said meeting.

Water Improvement Commission
By:
Chairman

Such notice shall be published once a week for three consecutive weeks prior to the holding of any meeting of the Commission for consideration of such standards; provided, however, in any county where no such newspaper is available for publishing said notice, the prescribed notice shall be posted at the county courthouse of said county for a period of three weeks prior to holding of any such meeting of the Commission.

(h) It shall be the duty of the Commission to receive and examine applications, plans, specifications and other data and to issue permits for the discharge of sewage, industrial waste and other waste into the waters of the State, stipulating in each permit the conditions under which such discharge may be permitted. Any order of the Commission with respect to the issuance of a permit shall be subject to review and appeal by the applicant as provided in subsection (n).

(i) It shall be the duty of the Commission, and it shall have the authority to adopt rules and regulations to carry out the provisions of this Chapter.

(j) It shall be the duty of the Commission to issue reasonable orders directing particular persons responsible for pollution to secure within a reasonable time to be specified by the Commission such operating results toward the control or abatement of pollution as the Commission may prescribe in accordance with this Chapter. (1) Every person who, prior to the effective date of this Chapter, is discharging any pollution into any waters of this State under a permit of the then existing Commission may continue to do so under said permit unless and until the Commission takes steps to modify the terms of the permit. (2) Every person who, subsequent to the effective date of this Chapter, begins discharging any new or increased pollution into any waters of this State shall apply to the Commission in writing for a permit and shall obtain such permit before discharging such pollution. (3) Every person, who, prior to the effective date of this Chapter, is discharging any pollution into any waters of this State without a permit covering such discharge may, in accordance with the terms of this Chapter, be required by the Commission to apply for such a permit as a condition of continuing such discharge. Whenever the Commission may determine after survey and investigation of a particular discharge of pollution for which no permit has been issued that such discharge may not meet the requirements of this Chapter or the rules and regulations or orders of the Commission, as the same may be applicable to such discharge, the Commission must require the municipality, industry or person discharging such pollution to apply for a permit with respect thereto. The applicant shall be granted a temporary permit upon his representation that a study looking toward improvement or control of the pollution is underway or will be instituted. The applicant shall be allowed a reasonable time, not exceeding six months, in which to develop and submit a plan to the Commission. If the plan submitted is satisfactory and approved by the Commission, a permanent permit shall be issued subject to compliance within seven years with such plan; however, if the plan is not satisfactory as submitted, the applicant shall be allowed a further period, not exceeding

six months, in which to submit a revised plan. The Commission shall act on any such plan not later than six months subsequent to the submission of such plan. A person who does not submit a plan satisfactory to the Commission as herein provided shall be required to install within seven years thereafter, such waste systems, devices or methods as the Commission determines necessary to control his pollution and as may be in conformity with the provisions of this Chapter.

Any and all pollution shall be subject to immediate control of the Commission if it creates, or is about to create, a health hazard.

(k) The Commission shall investigate from time to time the discharge of pollution into the waters of the State, and if such investigation discloses that the discharge is not being made by a permittee in accordance with terms and specifications of a permit, the Commission may issue to the permittee an order to cease and desist from the acts or practices specified in the order.

(l) The Commission may enter into agreement with the responsible authorities of the Federal government and of other states, subject to the approval of the Governor, relative to policies, methods, means and procedures to be employed to control pollution of any interstate water and to carry out such agreements by appropriate general and special orders. This power shall not be deemed to extend to the modification of any agreement with any other state concluded by direct legislative act, but unless otherwise expressly provided, the Commission shall be the agency for the administration and enforcement of any such legislative agreement.

(m) When the Commission makes any order directing any person or persons to do or not to do any act specified therein, a copy of such order shall be served upon such person or persons by registered mail or by other method provided in subsection (b) for service of process, and such person or persons may within a period of 30 days after such service, obtain a review of the order as provided in subsection (n). If no such review is obtained, then at the expiration of said period of 30 days after such service, the order of the Commission shall become final and conclusive. Service by registered mail as provided in this Chapter shall be had by mailing to the person to be served, postage prepaid, the papers to be served. The envelope containing such paper shall be marked "For Delivery Only to the Person to Whom Addressed" and a return receipt to be addressed to the Commission shall be demanded of the post office authority. Such return receipt when received shall be filed /filed/ in the Commission's records and any entry shall be made upon such records of the date that the return receipt was received. Such receipt and record entry shall be prima facie evidence of service of process upon the person to whom the registered letter was addressed and serviced, for the purposes of this Chapter, shall be dated from the date of the receipt by the Commission of the return receipt.

(n) Any person who shall feel himself aggrieved by any rule or order of the Commission shall have the right to obtain a review thereof by filing with the Commission, within the time provided in subsection (m), a sworn petition setting forth the grounds and reasons for his complaint and asking for a hearing of the matter involved. The Commission shall thereupon fix the time and place of such hearing and shall notify the petitioner thereof by registered mail not less than ten days in advance of the hearing. At any time prior to the commencement of the hearing, any person may become an intervenor in the proceedings by filing a sworn petition setting forth facts showing that his rights may be prejudiced by an order of the Commission in the matter involved. The Commission and its members shall have full power to subpoena witnesses for the Commission, for the petitioner and for any intervenor to administer oaths, examine witnesses under oath and conduct the hearing. At such hearing, the petitioner and any intervenor may appear, present witnesses and submit evidence. The order of determination of the Commission shall be served on the petitioner and any intervenor by registered mail or by other method provided in subsection (f) for service or /of/ process. At the expiration of 30 days from the date of serving on the parties such order or determination of the Commission upon the matters included in the hearing, the said order shall become final and conclusive unless the petitioner, or any intervenor whose rights are prejudiced by said order of the Commission, shall within such period of 30 days after the service of such final order, appeal to the Circuit Court of Montgomery County, Alabama, by giving cost bond with sufficient sureties payable to the State, in such amount not less than \$100.00 or more than \$500.00 as may be fixed in the order appealed from said cost bond to be filed with and approved by the Chairman of the Commission, who shall forthwith certify to the Circuit Court to which the appeal is taken, the said cost bond together with a certified copy of the record of all proceedings of the Commission in the matter appealed from, but not including a transcript of the testimony of witnesses or other evidence. Said matter shall be tried de novo on the equity side of said Circuit Court and shall be a preference case on the docket thereof. On such trial the Court shall have jurisdiction to determine whether said order of the Commission is lawful, and whether the same is reasonable, and whether a polluted condition of any water or waters exists or is about to exist as set forth in the order appealed from, and to affirm, modify or wholly set aside such order, it being the intent and purpose of this Chapter that the order of said Commission, when appealed as hereinabove provided, shall be final and conclusive only when so determined by such Court. The judgment of the Circuit Court shall be certified to the Commission. Any party to such action may within 30 days after judgment appeal to the Supreme Court of Alabama under the same procedure as governs appeals from courts of equity, if a supersedeas is desired by the party appealing, he may apply therefor to the Judge of the Court from which said appeal is taken, who shall award a writ of supersedeas, without additional bond, if, in his judgment, material damage is not likely to result thereby. Otherwise, said judge shall require such supersedeas bond as he deems proper, made payable to the State of Alabama in such amount as he shall require.

(o) The State Department of Public Health shall make such inspections, conduct such investigations, and do such other things as may be necessary to cooperate with the Commission in carrying out the provisions of this Chapter.

(p) Upon complaint made by the Commission, any person found guilty of willfully violating this Section or any order of the Commission which is made in pursuance of the provisions of this Chapter and which has become final and conclusive as provided in this Chapter shall be deemed guilty of a violation of the provisions of this Chapter which shall be punishable by a fine of not less than one hundred dollars nor more than ten thousand dollars.

(q) The Commission may recover damages by action at law in the Circuit Court for loss or destruction of wildlife, aquatic, fish or marine life caused by pollution of the waters of the State resulting from the wrongful act, omission or negligence of a person. Both punitive and compensatory damages may be recovered in a case where the pollution resulted from willful or wanton conduct on the part of the polluter; compensatory damages alone may be awarded when the pollution is caused by a negligent act or omission. Damages shall not be allowed in any case when the pollution is the result of an Act of God. Such suits shall be filed in the name of the State by the Attorney General, at the direction of the Commission, in the county, or in the case of more than one county, in any county in which such wildlife, aquatic, fish or marine life or any part thereof were so destroyed or killed. Such sums as may be recovered as punitive or compensatory damages for the loss or destruction of wildlife, aquatic, fish or marine life shall be credited to the Game and Fish Division of the Department of Conservation, said sums to be expended for the betterment and improvement of the affected waters, including restocking of fish. (Act No. 574, 1965 Gen. Act, p. 1058, effective November 26, 1965.)

Sec. 140(10). FUNDS, FACILITIES AND PERSONNEL. The Commission is authorized to accept and use such funds, facilities, or personnel as may be or may become available for the purposes of this Chapter, either directly to the Commission or in any of the State departments or from Federal or other agencies represented; but nothing herein shall be construed to limit, modify or supersede any of the powers or duties of said cooperating departments or agencies unless in direct conflict with this Chapter, nor to interfere with the power of each such department or agency to determine the disposition of funds specifically appropriated to it and to select, employ and control all of its employees regardless of the fact that said employees may be assigned and devoting the whole or a part of their time to work under the direction of the Commission. There is hereby created and there shall be a fund which shall be known as the Water Improvement Commission Fund. This Fund shall consist of (a) all moneys appropriated to the Commission by the State legislature of Alabama; (b) all moneys received by the Commission by appropriation from county or municipal governments; (c) all gifts, grants, bequests, or donations from individuals,

associations, corporations, or industries; (d) all moneys derived through any source of Federal aid; and (e) all moneys accruing to the Commission from any source whatever. The Fund shall be used and expended by the Chairman of the Commission in accordance with the terms of the gift, grant, bequest, appropriation or donation from which said moneys are derived, and in the absence of any such terms or stipulations shall be expended by the Chairman of the Commission in furtherance of any of the provisions of this Chapter. All necessary expenses of the Commission shall likewise be paid out of said fund on the requisition of the Chairman of the Commission as may be deemed advisable. The Commission is authorized to employ such consultants and full-time technical and clerical and other workers as are necessary and within the available funds to carry out the purposes of this Chapter. The technical staff to be employed by the Commission shall be selected from, but not limited to, the following professional groups: sanitary engineer, chemical engineer, biochemist, geologist, fish culturist, mining engineer, agricultural engineer, forest engineer, analytical chemist, agronomist, bacteriologist, and biologist. (Act No. 574, 1965 General Acts, p. 1058, effective November 26, 1965.)

Sec. 140(11). CHAPTER INTENDED TO SUPPLEMENT EXISTING LAW. - This Chapter is intended to supplement existing law, and no part thereof shall be construed to repeal any existing laws specifically enacted for the protection of health or the protection of fish and game of the State; however, Sections 140(1) to 140(5) of this Title, as amended, are hereby expressly repealed. (Act No. 574, 1965 General Acts, p. 1058, effective November 26, 1965.)

Sec. 140(12). CONTINUATION OF PRESENT MEMBERSHIP AND BUSINESS; ADDITIONAL MEMBER. - The members of the Water Improvement Commission who are serving their terms upon the effective date of this Chapter together with the additional member representative of wildlife conservation herein provided and except for the members representative of wildlife conservation herein provided and except for the members representative of the University of Alabama and Auburn University, which are deleted, shall, upon the effective date of this Chapter, become members of the Commission herein established, it being the intent that the present membership of the Water Improvement Commission together with said additional member and except for the two members deleted shall constitute and become the new Commission with the terms of each of the members remaining unchanged. In respect to said additional member representative of wildlife conservation herein provided, the said Alabama Wildlife Federation, within sixty days after this Chapter becomes a law, shall submit five nominees for said membership to the Governor who shall appoint from said five names so submitted the additional member representative of wildlife conservation whose term shall begin immediately at the time of said appointment. The term of said additional member shall run concurrently with that of the other or incumbent member representative of wildlife conservation and shall expire at the same time, and thereafter the appointment of said two members representative

of wildlife conservation shall be at the same time and their terms shall run concurrently. All of the matters pending before the Water Improvement Commission upon the effective date of this Chapter shall, upon the effective date of this Chapter, be transferred to the jurisdiction of the new Commission, and all actions heretofore taken and jurisdiction heretofore exercised by the Water Improvement Advisory Commission or Water Improvement Commission, as the case may be, shall be considered in all respects as having been acts of the new Commission. All personnel who are in the employ of or are assigned to the Water Improvement Commission upon the effective date of this Chapter shall, upon the effective date of this Chapter, become the employees of or assigned to the new Commission. All books, records, equipment, facilities, funds allocated to or in its possession (including unexpended appropriations), notes and accounts receivable and all other property of every kind whatsoever of the Water Improvement Commission upon the effective date of this Chapter shall, upon the effective date of this Chapter, be transferred to, vest in and become the property of the new Commission, and all contracts, leases, debts, obligations and liabilities of every kind whatsoever of the Water Improvement Commission upon the effective date of this Chapter shall, upon the effective date of this Chapter, be transferred to, inure to the benefit of and be binding upon the new Commission, it being the intent of this Chapter that the new Commission supersede and replace, but continue all business and affairs of, the Water Improvement Commission. (Act No. 574, 1965 General Acts, p. 1058, effective November 26, 1965.)

1940 CODE OF ALABAMA
RECOMPILED 1958

LEASES BY STATE

Title 26
Chapter 3

Article 2, Subdivision 2

Sec. 179(561). LEASE OF LANDS UNDER NAVIGABLE WATERS, ETC. - The Director of Conservation, on behalf of the State, is thereby authorized to lease, upon such terms as he may approve, any lands or any right or any interest therein under any navigable streams or navigable waters, bays, estuaries, lagoons, bayous or lakes, and the shores along any navigable waters to high tide mark, and submerged lands in the Gulf of Mexico within the historic seaward boundary of this State, which is hereby declared to extend seaward six leagues from the land bordering the Gulf, for the exploration, development and production oil, gas and other minerals, or any one or more of them, on, in and under such lands; and such lands or interests therein for such purposes shall be supervised and managed by the Department of Conservation. (Act No. 158, 1956, 1st Ex. Sess., appvd. February 24, 1956.)

Sec. 179(562). DISPOSITION OF REVENUES FROM LEASES. - The revenues that shall accrue under the provisions of this Subdivision, from rentals, royalties and all other sources, and subject to the cost of administration, shall be the property of the department or institution to which said lands belong or in which said department or institution shall own the beneficial interest. All revenue accruing from the lease of the bed of any navigable streams, waterways, bays, estuaries, lagoons, bayous, lakes, and any submerged lands in the Gulf of Mexico within the historic seaward boundary of this State, under the provisions of this subdivision, subject to cost of administration, shall be paid by the Director of Conservation to the State Treasurer to become a part of the general funds of the State of Alabama. The Department of Conservation shall be entitled to five per cent of all revenues derived under the provisions of this subdivision as cost of administration. Such cost of administration shall be covered into the State Treasury by the Director of Conservation to the credit of either the State Lands Fund, the Forestry Fund, or the State Parks Fund, as the Director deems appropriate, and for the best interest of the Department. (Act No. 158, 1956, 1st Ex. Sess., appvd. February 24, 1956.)

1940 CODE OF ALABAMA
RECOMPILED 1958

NAVIGATION AND WATERCOURSES

Title 38
Chapter 1

Sec. 1. STATE MAY ENGAGE IN PROMOTING, DEVELOPING, CONSTRUCTING, ETC., HARBORS AND SEAPORTS. - The State of Alabama may engage in, through the agency hereinafter provided and designated and such other agencies as are provided by law, works of internal improvement and of promoting, developing, constructing, maintaining, and operating all harbors or seaports within the State, or its jurisdiction, including the acquisition or construction, maintaining and operating at seaports of harbor water craft and terminal railroads, as well as all other kinds of terminal facilities. Such work or improvement and facilities shall be under the management and control of the State through the governing agency herein-after provided and designated, or such other governing agency or agencies as are provided by law, and the entire cost to the State of engaging in such work or development shall not exceed the sum of ten million dollars. (Act No. 303, 1923 General Acts, p. 330, appvd. September 18, 1923.)

Sec. 1(9). STATE DOCKS BOARD ABOLISHED AND STATE DOCKS DEPARTMENT CREATED; FUNCTIONS. - The Alabama State Docks Board created by an act which became effective August 1, 1951 (Acts of the Legislature of Alabama, 1950-51, Vol. 1, page 450) is hereby abolished. Hereafter there shall be a State agency known as the Alabama State Docks Department, hereinafter sometimes referred to as the Department, to promote, supervise, control, manage and direct the State docks and all other State lands included within the jurisdiction of this Chapter. The Department shall consist of a Director of State Docks and a State Docks Advisory Committee, as hereinafter provided. The Alabama State Docks Department shall be the agency of the State through which the State shall accomplish the maintenance and operation of all the improvements and facilities authorized by Chapter 1 of Title 38, Code of Alabama (1940), as amended. (Act No. 104, 1955 General Acts, p. 346, effective July 10, 1955.)

Sec. 1(16). POWERS, DUTIES, ETC., OF DEPARTMENT; SUCCEEDS TO RIGHTS AND DUTIES OF STATE DOCKS BOARD. - The Department shall have and exercise all the rights, powers, duties and authority conferred upon it under Sections 1(9) to 1(16) of this Title, and also the rights, powers, duties and authority not inconsistent with the provisions of Sections 1(9) to

1(16) of this Title which have been conferred by law upon the Alabama State Docks Board. Wherever the words "Department of State Docks and Terminals" and the words "Alabama State Docks Board" are used in any statute in force at the time of the effective date of Sections 1(9) to 1(16) of this Title, they shall be construed and taken to mean the Alabama State Docks Department. The Department shall succeed to all the rights, powers, duties and obligations of the Alabama State Docks Board, and the legal rights of said Board are hereby transferred to the Department. (Act No. 104, 1955 Gen. Acts, p. 348, effective July 10, 1955.)

Sec. 1(17). PROMOTING, CONSTRUCTING, MAINTAINING AND OPERATING HARBORS AND PORTS. - The State of Alabama may engage in, through the agency of the Alabama State Docks Department provided and designated by law, works of internal improvement and of promoting, developing, constructing, maintaining, and operating all harbors, seaports or riverports within the State, or its jurisdiction, including the acquisition or construction, maintaining and operating at seaports and riverports of harbor watercraft and terminal railroads, as well as other kinds of terminal facilities. Such work of improvement and facilities shall be under the management and control of the State through the governing agency provided and designated by law. (Act No. 367, 1955 General Acts, p. 887, appvd. September 7, 1955.)

Sec. 1(18). JURISDICTION OF STATE DOCKS DEPARTMENT. - The jurisdiction of the State Docks Department in any harbor or seaport within the State shall extend over the waters and shores of such harbor and shall extend to the outer edge of the outer bar at such harbor or seaport. The jurisdiction of the Department shall also extend over the waters and shores of all rivers and streams within the State which are navigable for commercial traffic, or which may be made so navigable at any time in the future. The jurisdiction of the Department shall not be exclusive, however, and nothing contained herein shall be taken as a deprivation of the authority of the Department of Conservation to control, hold, lease, manage, or own the minerals, sands, gravel or any other natural resources in the beds of navigable streams or other public waters as provided by law. (Act No. 367, 1955 General Acts, p. 888, appvd. September 7, 1955.)

Sec. 1(19). POWER TO ACQUIRE AND OPERATE WHARVES, DOCKS, WAREHOUSES, ETC.; SUBMISSION OF PLANS TO GOVERNOR; EMINENT DOMAIN. - The State, in engaging in the work of internal improvement, or promoting, developing, constructing, maintaining, and operating harbors, seaports and riverports within the State and its jurisdiction, acting through the Department, shall have the power to acquire, purchase, install, lease, construct, own, hold, maintain, equip, use, control, and operate at seaports, or at any ports located on any river or stream which is navigable for commercial traffic, or which may be made os navigable at any time in the future, wharves,

piers, docks, quays, grain elevators, cotton compresses, warehouses and other water and rail terminals and other structures, and facilities needful for the convenient use of the same in the aid of commerce, including the dredging of approaches thereto; but before said Department shall exercise such authority, the Director shall first submit plans, including estimates of cost, prepared by competent engineers or architects, to the Governor, who shall consult and confer with the Department in reference thereto, and as to dredging, with the proper United States authorities. Provided, the Department shall have no authority to condemn or acquire by exercise of the right of eminent domain any privately owned ports, terminals or docks or loading facilities located on any navigable river or stream, except at the Port of Mobile. (Act No. 367, 1955 General Acts, p. 888, appvd. September 7, 1955.)

Sec. 9. TERRITORIAL JURISDICTION OF DEPARTMENT. - The jurisdiction of the Department of State Docks and Terminals in any harbor or seaport within the State shall extend over the waters and shores of such harbor or seaport and over that part of all tributary streams flowing into such harbor or seaport in which the tide ebbs and flows, and shall extend to the outer edge of the outer bar at such harbor or seaport. (Act No. 1, 1927 General Acts, p. 1, appvd. January 17, 1927.)

Sec. 13. POWER OF STATE IN WORKS OF INTERNAL IMPROVEMENTS. - The State, in engaging in the work of internal improvement, or promoting, developing, constructing, maintaining, and operating harbors or seaports within the State and its jurisdiction, acting through the Department shall have power to acquire, purchase, install, lease, construct, own, hold, maintain, equip, use, control and operate at seaports, wharves, piers, docks, quays, grain elevators, cotton compresses, warehouses and other water and rail terminals and other structures, and facilities needful for the convenient use of the same in the aid of commerce including the dredging of approaches thereto, but before the said Department shall exercise such authority the Director shall first submit plans, including estimates of cost, prepared by competent engineers or architects, to the Governor who shall consult and confer with the Department in reference thereto and as to dredging with the proper United States authorities. (Act No. 303, 1923 General Acts, amended 1927, p. 1; amended 1935, p. 821.)

Sec. 18. TITLE TO PROPERTY VESTS IN STATE; SALE OR LEASE. - The title to all property acquired under the authority of this Chapter shall vest in the State of Alabama, but the Department, with the consent and approval of the Governor, may dispose of, sell or lease to others, at reasonable prices and for reasonable compensation, any of said property, equipment and facilities; provided that the proceeds of all such sales shall be returned to capital account. The proceeds from all leases shall become a part of the operating fund. (Act No. 303, 1923 General Acts, amended 1927, p. 1; amended 1935, p. 821; amended 1936, Ex. Sess., p. 57.)

Sec. 18(1). SALES OF SUBMERGED LANDS AND MADE LANDS LYING UNDER OR ABUTTING TIDAL WATERS. - The Director of the Department of State Docks and Terminals of Alabama is vested with power and authority to obtain and negotiate a sale of any submerged lands and made lands claimed or owned by the State, which lands are under or were formerly under any of the tidal waters of the State of Alabama, or which lands abut such tidal waters provided however that if such lands abut or adjoin in whole or in part any uplands then no such sale shall be made to any purchaser other than the owner of such uplands, except a sale of so much of said land as may be used and occupied by such purchaser without interfering with the riparian rights appurtenant to such uplands, unless the owner of such uplands relinquishes such rights by appropriate instrument made in connection with such sale, and except that such sales may be made to a public body of the submerged or made land upon which docks or wharves have been constructed by such public body, the sale in such instances to be for the reasonable value of the submerged or made land used by such docks and wharves and to be fixed as of the date of the beginning of the construction of such docks and wharves, and the title in such instances to relate back to the date of the commencement of the construction of the docks or wharves. The Director of said Department shall certify to the Governor that such sale has been obtained and negotiated and that all requirements of law with respect to such sale have been complied with, and if such sale is concurred in by the Governor, the Governor may cause a patent to issue under the Seal of the State, signed by the Governor and attested by the Secretary of State, conveying such property. The recitals contained in such conveyance shall be conclusive evidence that all requirements for the issuance thereof have been complied with. Such conveyance shall, except to the extent otherwise stated therein, convey all of the right, title and interest of the State of Alabama in and to such lands and shall be conclusive evidence that such lands are no longer needed by the State of Alabama for any purpose and that all public rights of navigation have ceased and determined as to such lands. In negotiating any such sale, the Director of said Department may in his discretion obtain an appraisal of the value of the right, title and interest of the State of Alabama in and to such lands the subject of such sale. The proceeds of any such sales shall be paid by the purchaser to said Department of State Docks and Terminals and shall be used by it in its work of harbor development. This Section shall apply only to such lands which lie shoreward of harbor lines established by the authorities of the United States and of the State of Alabama having jurisdiction over such matters. All departments and agencies of the State, other than the Department of State Docks and Terminals are relieved of any duties, responsibilities and powers with reference to the lands which this Section applies, as and when this Section becomes applicable thereto. The word "upland" as used herein is hereby defined to mean any land, whether artificially made land or natural land, as to which the State of Alabama has no right, title or interest, or as to which the State's only right, title, or interest, is by virtue of a tax sale with respect to which there is an outstanding statutory right of redemption. (Act No. 233, 1945 General Acts, p. 355, amended 1947, p. 389, appvd. October 13, 1947.)

Sec. 22. PURCHASE OR EMINENT DOMAIN, RIGHT OF. - For the acquiring of rights of way and property necessary for the construction of terminal railroads and structures, including railroad crossings, wharves, piers, docks, quays, grain elevators, cotton compresses, warehouses and other riparian and littoral terminals and structures and approaches thereto needful for the convenient use of same, the State, acting through said Department, shall have the right and power to acquire the same by purchase, by negotiation, or by condemnation, and should it elect to exercise the right of eminent domain, it may proceed in the manner provided by the general laws of the State of Alabama for procedure by any county, municipality or corporation organized under the laws of this State, or in any other manner provided by law. (Act No. 303, 1923 General Acts, p. 330, amended 1927, p. 1.)

Sec. 23. TO WHAT PROPERTY EMINENT DOMAIN APPLICABLE. - The power of eminent domain shall apply, not only as to all property of private persons or corporations, but also as to property already devoted to public use, provided, however, the said Department shall have no authority to acquire without the consent of the owner thereof any property now operated and used for port purposes or such purposes as the Department is authorized to acquire and use property for, unless an actual necessity therefor be alleged and proven. (Act No. 385, 1923 General Acts, p. 220, amended 1935, p. 821.)

Sec. 24. OPERATION OF IMPROVEMENTS; HOW CONDUCTED. - The operation of all harbors and seaports within the State and the improvements and facilities hereby authorized shall be conducted in the name of the Department of State Docks and Terminals. In such operation, the Department may contract such current indebtedness as is necessarily incident to the prosecution of th work in accordance with the terms of this Chapter. The Department may adopt rules not inconsistent with the provisions of this Chapter for the purpose of regulating, controlling and conducting the said operation. (Act No. 303, 1923 General Acts, p. 330, amended 1927, p. 1.)

Sec. 39. ESTABLISHMENT OF HARBOR LINES. - The Department may establish harbor lines, exterior and interior, when not in conflict with similar lines established by the United States. The Department is hereby empowered to grant licenses in the name of the State to any riparian owner for the construction of wharves, booms, and other aids to navigation when such wharves, booms or aids are appurtenant to his upland. (Act No. 1, 1927 General Acts, p. 1.)

Sec. 40. ESTABLISHMENT OF FOREIGN TRADE ZONE. - In order to comply with the laws, rules and regulations of the Federal government governing

the establishment of foreign trade zones, under an Act of Congress entitled "An Act to Provide for the Establishment, Operation and Maintenance of Foreign Trade Zones in Ports of Entry of the United States, to Expedite and Encourage Foreign Commerce, and for other purposes, approved June 18th, 1934," or any amendments thereto, the Department is authorized to establish at the harbors and seaports within this State a foreign trade zone and to establish rules and regulations for controlling and conducting said zone. (Act No. 523, 1935 General Acts, p. 1111.)

Sec. 42. REGULATIONS OF DEPARTMENT; PENALTIES. - The Department is authorized to formulate and promulgate rules and regulations for the operation of any seaport or harbor within the State. Any person, firm, association, or corporation, violating any of the rules and regulations established or authorized to be established by this Chapter shall be guilty of a misdemeanor and for each offence shall be subjected to a fine of not exceeding five hundred dollars and may also be imprisoned in the county jail or sentenced to hard labor for the county for not more than six months. Any fines so collected shall be paid to the Department and by it placed to the credit of the operating fund. (Act No. 1, 1927 General Acts, p. 1.)

Sec. 43. FAILURE TO REMOVE DANGEROUS VESSELS ON ORDER OF THE DEPARTMENT. - Any owner or any agency in control of any vessel that is anchored, moored, or made fast to the shore when the same is in bad repair and liable to sink, who fails to remove it from the harbor to a designated place when directed to do so by an accredited agent of the Department, shall be guilty of a misdemeanor and shall be fined not exceeding five hundred dollars and may also be imprisoned in the county jail or sentenced to hard labor for the county for not more than six months. The offender shall be guilty of a new and similar offense and subject to the same penalty for each forty-eight hours that elapse after the order to remove said vessel from the harbor or seaport is served. Any fines so collected shall be paid to the Department and by it placed to the credit of the operating fund. (Act No. 1, 1927 General Acts, p. 1.)

Sec. 44. MASTERS, AGENTS, OR OWNERS OF WATER CRAFTS, VIOLATING RULES AND REGULATIONS OF NAVIGATION. - If any master, agent, or owner of any water craft shall refuse or neglect to obey the lawful orders or directions of the Director of his agents in any matter pertaining to the regulations of Mobile Harbor, or the removal or stationing of any water craft in violation of the navigation laws of the State, such master, agent, or owner so refusing or neglecting is guilty of a misdemeanor, and, upon conviction thereof before any court of competent jurisdiction, shall be punished by a fine not to exceed fifty dollars, or by imprisonment not to exceed one hundred days in jail of the City or County of Mobile.

Sec. 45. OBSTRUCTING NAVIGATION; PENALTY FOR. - Any person who shall deposit or cause to be deposited, in the waters of the Harbor of Mobile, any substance that will sink and form an obstruction to navigation, without first obtaining permission in writing, of the Department of State Docks and Terminals, which permission shall describe with an ordinary degree of certainty, the place where such deposit shall be made, and which shall be recorded by the Secretary-Treasurer of the Department, shall be guilty of a misdemeanor, and, upon conviction thereof, before a court of competent jurisdiction, shall be fined not less than one hundred nor more than five hundred dollars, or imprisoned for not less than thirty and not more than ninety days; but nothing herein shall be construed to prevent or interfere with the construction of work authorized by law to be done at any time in connection with the Mobile Harbor. (Act No. 628, 1915 General Acts, p. 678.)

Sec. 45(14). AUTHORITY OF STATE AND STATE DOCKS DEPARTMENT. - In addition to the authority granted to the State of Alabama by the provisions of Section 93 of the Constitution of Alabama as amended, and any other laws of this State, the State is hereby expressly authorized and empowered to engage in works of internal improvement by promoting, developing, constructing, maintaining and operating along navigable rivers, streams or waterways now or hereafter existing within this State, all manner of dock facilities, elevators, compresses, warehouses, water and rail terminals, and other structures and facilities and improvements of every kind needful for the convenient use of same, in aid of commerce and use of the waterways of this State, provided, however, that all such works, improvements and facilities shall always be and remain under the management and control of the Alabama State Docks Department. The Alabama State Docks Department shall be the agency of the State under which the State shall accomplish all the purposes of this Chapter and the acquisition, construction, maintenance and operation of all the improvements and facilities acquired or constructed or enlarged pursuant to the provisions of this Chapter. (Act No. 311, 1957 General Acts, p. 409, appvd. August 20, 1957.)

Sec. 45(16). AUTHORITY TO ACQUIRE, CONSTRUCT, MAINTAIN, ETC., FACILITIES. - Through the Alabama State Docks Department, the State, in engaging in the works of internal improvements authorized by this Chapter, shall have the power to acquire, purchase, install, lease, construct, own, hold, maintain, equip, control and operate along navigable rivers, streams or waterways and at river ports or landings along navigable rivers, streams or waterways now or hereafter existing within the State, wharves, piers, docks, quays, grain elevators, cotton compresses, warehouses, improvements and water and rail terminals and such structures and facilities as may be needful for convenient use of the same, in aid of commerce and use of navigable waterways of the State, to the fullest extent practical and as as the State Docks Department shall deem desirable or proper. This

authority shall include dredging of approaches to any facilities acquired, erected, maintained or operated pursuant to this Chapter; provided, however, that before the State Docks Department shall exercise the authority invested in it hereby, the Director of State Docks shall first submit plans, including estimates of cost, prepared by competent engineers or architects, and a survey made by competent independent and professional engineers showing the economic feasibility of exercising its authority, to the Governor for his approval or disapproval in reference thereto, and as to dredging, the State Docks Director shall likewise confer with proper United States authorities; provided, the State Docks Department shall have no authority to condemn or acquire by exercise of the right of eminent domain any privately owned ports, terminal, docks or loading facilities located on any navigable river or stream except at the Port of Mobile. (Act No. 311, 1957 General Acts, p. 409, appvd. August 20, 1957.)

Sec. 45(18). POWER OF EMINENT DOMAIN. - There is hereby vested in the State Docks Department power of eminent domain in carrying out the provisions of this Chapter, which power shall apply not only as to all property of private persons and corporations, except as limited in Section 45(16) of this Chapter, but also as to property already devoted to public use; provided, however, that the State Docks Department shall have no authority to acquire without consent of the owner thereof by condemnation any property now operated and used for port purposes or such purposes as the State Docks Department is authorized to acquire and use property for, unless the necessity therefor be alleged and proved. (Act No. 311, 1957 General Acts, p. 410.)

Sec. 45(19). HOW PROPERTY MAY BE ACQUIRED. - In acquiring rights of way and property necessary for the construction of railroads and structures, including railroad crossings, wharves, piers, elevators, compresses, warehouses, improvements and riparian and littoral terminals and structures and convenient approaches thereto in furtherance of the purposes of this Chapter, the Alabama State Docks Department shall have the power to acquire same by gift, lease, purchase, negotiation or condemnation, and in condemning property, it may proceed in any manner authorized by the general laws of the State for proceedings by any county, municipality or corporation organized under the laws of this State to acquire property by condemnation, subject to the restrictions contained in this Chapter. (Act No. 311, 1957 General Acts, p. 410.)

Sec. 45(35). AUTHORITY TO ACQUIRE, CONSTRUCT, MAINTAIN, ETC., NEW FACILITIES; COMPLETE FACILITIES ACQUIRED UNDER 1957 ACT. - The State, acting through the Department, shall, in engaging in the works of internal improvement authorized by this Chapter, have the power to acquire, purchase, install, lease, construct, own, hold, maintain, equip, control

and operate along navigable rivers, streams or waterways now or hereafter existing within the State, and at river ports or landings along such navigable rivers, streams or waterways, dock facilities of all kinds, in aid of commerce and use of navigable waterways of the State, to the fullest extent practicable and to such extent as the Department shall deem desirable or proper. The authority herein granted shall include the completion of any dock facilities originally acquired under the provisions of the 1957 Docks Act, and also the dredging of approaches to any dock facilities acquired, erected, maintained or operated pursuant to this Chapter or the 1957 Docks Act. Before the Department shall exercise the authority vested in it hereby with respect to any dock facilities or any dredging of the approaches thereto, the Department shall first submit plans, including estimates of cost, prepared by competent engineers or architects, and a survey made by competent independent and professional engineers showing the economic feasibility of the proposal envisaged by such plans, to the Governor for his approval or disapproval; and in the event of the Governor's disapproval, the plans shall either be abandoned or be revised and again submitted to the Governor for his approval or disapproval. Prior to the commencement of any construction, dredging, or other work hereunder for which a permit from, or the consent of, any United States authorities may be required by law, the Department shall obtain the requisite permit or consent. (Act No. 98, 1959 2nd Ex. Sess., p. 290, appvd. August 18, 1959.)

Sec. 45(36). AUTHORITY GRANTED IS IN ADDITION TO EXISTING AUTHORITY OF STATE DOCKS DEPARTMENT. - All administration, supervision, authority and responsibility under this Chapter and operations conducted hereunder, vested in the Department, shall be in addition to all power, duties and authority conferred on the Department by any other statute, it being the intent of this Chapter that the authority, powers, responsibilities and duties imposed by this Chapter shall be in addition to and supplemental of the powers, authority, responsibilities and duties conferred or imposed on the Department by any other laws of the State. (Act No. 98, 1959 2nd Ex. Sess., p. 290, appvd. August 18, 1959.)

Sec. 45(37). ACQUISITION OF PROPERTY. - In acquiring rights of way and property necessary for the construction of dock facilities and convenient approaches thereto in furtherance of the purposes of this Chapter, the Department shall have the power to acquire same by gift, lease, purchase, negotiation or condemnation. The Department shall have all powers with respect to the condemnation of properties for the purpose of this Chapter that were granted to that Department in the 1957 Docks Act with respect to the condemnation of properties for the purposes of the 1957 Docks Act; and the exercise of such powers hereunder shall be subject to all limitations and conditions prescribed in the 1957 Docks Act. (Act No. 98, 1959 2nd Ex. Sess., p. 290, appvd. August 18, 1959.)

Sec. 45(50). AUTHORITY TO ACQUIRE, CONSTRUCT, MAINTAIN, ETC., NEW FACILITIES AND TO COMPLETE FACILITIES ACQUIRED UNDER 1957 ACT. - The State, acting through the Department, shall, in engaging in the works of internal improvement authorized by this Chapter, have the power to acquire, purchase, install, lease, construct, own, hold, maintain, equip, control and operate along navigable rivers, streams or waterways now or hereafter existing within the State, and at river ports or landings along such navigable rivers, streams or waterways, dock facilities of all kinds, in aid of commerce and use of navigable waterways of the State, to the fullest extent practicable and to such extent as the Department shall deem desirable or proper. The authority herein granted shall include the completion of any dock facilities originally acquired under the provisions of the 1957 Docks Act, or the 1959 Docks Act; and also the dredging of approaches to any dock facilities, acquired, erected, maintained or operated pursuant to this Chapter, or the 1957 Docks Act, or the 1959 Docks Act. Before the Department shall exercise the authority vested in it hereby with respect to any dock facilities or any dredging of the approaches thereto, the Department shall first submit plans, including estimates of cost, prepared by competent engineers or architects, and a survey made by competent independent and professional engineers showing the economic feasibility of the proposal envisaged by such plans, to the Governor for his approval or disapproval; and in the event of the Governor's disapproval, the plans shall either be abandoned or be revised and again submitted to the Governor for his approval or disapproval. Prior to the commencement of any construction, dredging, or other work hereunder for which a permit from, or the consent of, any United States authorities may be required by law, the Department shall obtain the requisite permit or consent. (Act No. 716, 1961 General Acts, p. 1019, appvd. September 8, 1961.)

Preceding Page BLANK - NOT FILMED

1940 CODE OF ALABAMA
RECOMPILED 1958

OBSTRUCTING NAVIGATION; DAMS, ETC.

Sec. 104. NAVIGABLE WATERS. - All navigable waters in this State are public thoroughfares.

Sec. 105. OBSTRUCTIONS, HOW REMOVED. - The Court of County Commissioners or like governing body is authorized to make contracts for opening or clearing out any navigable stream within the county, and for keeping the same free from obstructions.

Sec. 106. OBSTRUCTING STREAMS USED FOR FLOATING TIMBER TO MARKET. - Any person who, during the season of high waters, leaves or causes to be left in any of the streams of this State used for floating timber to market, saw logs, or hewn or square timber, which he has put or caused to be put into such stream, so massed or collected together as to obstruct such stream, and who does not use diligence to effect a removal of such obstructions, must, on conviction be fined not less than twenty-five nor more than two hundred and fifty dollars.

Sec. 107. OBSTRUCTING NAVIGABLE WATERCOURSE. - Any person who dams up or otherwise obstructs a navigable watercourse, must, on conviction, be fined not less than one hundred nor more than one thousand dollars.

Sec. 108. DAMAGES FOR DIVERTING. - Any person, diverting any stream, whether navigable or not, from its natural channel, is liable to any party aggrieved for the damages sustained.

Sec. 109. FLOATING LOGS, TIMBER, OR LUMBER UPON WATERCOURSE WITHOUT SUFFICIENT FORCE TO PREVENT OBSTRUCTION. - Any person who floats any logs, timber, or lumber upon any navigable watercourse, without accompanying the same with sufficient force to prevent the obstruction of such watercourse so as to hinder the removal of any logs, timber, or lumber from the banks or shores thereof, must, on conviction, be fined not less than one hundred nor more than one thousand dollars.

Sec. 110. TURNING LOGS, TIMBER, OR LUMBER OUT OF BOOM WITHOUT NOTICE TO OWNER. - Any person owning or controlling any boom in any navigable watercourse, who turns adrift logs, timber, or lumber caught in such boom,

without giving the owner of such logs, timber, or lumber five days' notice of his intention to do so, must, on conviction, be fined not less than one hundred nor more than one thousand dollars.

Sec. 111. OPENING OR CUTTING LOOSE BOOM WITHOUT AUTHORITY. - Any person who opens the boom of another for any purpose without his permission, or willfully cuts, unties, loosens, or casts off any rope, chain, pole, timber, pile, or other fastening by which a boom containing any logs, timber or lumber is secured, must, on conviction, be fined not less than one hundred nor more than one thousand dollars.

Sec. 112. MOBILE HARBOR; FASTENING RAFTS AND OBSTRUCTING SHIP CHANNEL IN MOBILE BAY. - Any person who makes any vessel, boat, or water craft of any description, or any raft or collection of logs, lumber, or timber, fast to any beacon or light stake or piling which may be of any use or benefit in making use of the dredged channel in the Bay of Mobile, is liable to indictment in the Circuit Court of Mobile County, or any other court of competent jurisdiction, and must, on conviction, be fined not more than five hundred dollars, and may also be imprisoned in the county jail, or sentenced to hard labor for the county, for not more than six months.

Sec. 113. SAME; INJURING SHIP CHANNEL, BEACON LIGHT, ETC. - Any person who knowingly or willfully causes, or is concerned in causing, any damage or injury to any part of the dredged channel, as it now exists, or may hereafter exist, at any point or points between the upper or northern limits of the Port of Mobile and the lower part of the Bay of Mobile, or to any beacon light, stake, piling, or other matter, or thing, which is or may be intended to be used, or used in connection with such dredged channel for the better navigation of the same, is liable to indictment in the Circuit Court of Mobile County or any other court of competent jurisdiction, and, on conviction, must be fined not more than ten thousand dollars, and may also be imprisoned in the penitentiary for not more than twenty years.

Sec. 114. SAME; MASTER OF VESSEL DRAWING MORE THAN TWELVE FEET PASSING CHANNEL WITHOUT PERMIT, ETC. - Any master or person in charge of any vessel drawing more than twelve feet of water, which may enter into the dredged channel between the upper limits of the Port of Mobile and the outer bar of the Bay or Harbor of Mobile, without a permit from the harbor master, or in violation of the rules and regulations of the Commissioners of pilotage of the Port and Harbor of Mobile, is liable to indictment in the Circuit Court of Mobile County, or any other court of competent jurisdiction, and must, on conviction, be fined not more than ten thousand dollars, and may also be imprisoned in the penitentiary for not more than ten years.

Sec. 115. TRESPASS AFTER WARNING ON BOOMS, BULKHEADS, OR PILES, ERECTED OR MAINTAINED BY RIPARIAN PROPRIETORS. - Any person who, having been warned within the twelve months next preceding by the owner or proprietor not to do so, trespasses upon any boom, bulkhead, or piles, lawfully erected or maintained in any of the waters of this State by any riparian owner or proprietor by fastening any boat or other thing thereto, or by making any other use thereof, without first having obtained the consent of such owner or proprietor, or any person who continues to make such use of any boom, bulkhead or piles, after being warned by the owner or proprietor thereof to discontinue the same, must, on conviction, be fined not less than ten nor more than one hundred dollars for each day he continues to make such use of such boom, bulkhead, or piles, and one-half of the fine must go to the owner or proprietor thereof.

DAMS ON NAVIGABLE RIVERS

Article 2 Title 38

Sec. 116. EASEMENT AND RIGHT TO CONSTRUCT DAMS ACROSS NAVIGABLE RIVERS. - Any person, firm or corporation organized for the purpose of improving the navigation upon a navigable river in the State of Alabama, and of developing in connection therewith a water power thereof by a dam and lock, or a system of dams and locks, and electrically transmitting and distributing such power for the use of the public, which shall have acquired the necessary lands upon both sides of said river to the extent of at least one more than half of the necessary abutment sites for the said dam or system of dams, and lock or system of locks and shall have been organized or incorporated for the specific and particular purpose of improving the navigation of and developing water power in connection with a particular and specified river, and has prepared plans for the construction of a dam or system of dams and a lock or system of locks appertaining thereto, and filed a copy of said plans in the Office of the Secretary of State of Alabama, together with a certified copy of its articles of incorporation (if a corporation), which provide both for the improvement of navigation of such river, and for the developing of the full water power of the same over the stretch of river thus to be improved, shall have the authority to construct a dam or system of dams, with a lock or system of locks appertaining thereto in such river, for the improvement of navigation of said river by one or more slack water pools, due to the construction of said dam or dams and the development of water power in connection therewith, and to that end and in consideration of the benefits to the public by reason of the improvement of navigation of such river and the development of water power thereof, as herein provided, is granted an easement for power purposes to and in the waters and bed

of the river in which dam or system of dams, and lock or system of locks are to be constructed, for the full area covered by the slack water pool or pools which will be created by the construction of the said dam or system of dams, to the extent necessary for developing the full power of said river over that length of same upon which navigation is to be improved as provided herein, and for providing suitable and convenient sites for the said dam or system of dams, locks, power houses, and other features appurtenant thereto and necessary for navigation and power purposes, or for either of them, and to the extent made necessary by the impounding, diversion, and conversion of the said waters as the same may be caused by the construction of said dam or system of dams, or by any other change from the normal state of the said river, due to said construction, and necessary for the purpose of deriving the energy therefrom.

Sec. 117. EMINENT DOMAIN, IMPROVEMENT OF NAVIGATION. - Any such person, firm, or corporation may exercise the power of eminent domain, for the purpose of acquiring such lands as it may be necessary or convenient to flood or otherwise utilize in order to improve navigation as provided in this Article, such lands to include as well as all the area submerged, a strip of land fifty feet in width bordering upon the margins of the slack water pool or pools as the same may be defined at the highest stage of the river at any time after the completion of the improvements herein provided for; and the right hereby conferred to exercise such power of eminent domain is cumulative. No person, firm, or corporation shall acquire the rights by this Article granted, unless the dam or system of dams, and lock or system of locks, to be constructed by such person, firm, or corporation are so planned as, when constructed, will by the operation thereof improve the navigation of the river in which the dam or system of dams, lock or system of locks, are to be built, and will develop the full power of such river over the length of same upon which navigation is to be improved, as provided in this Article. Such person, firm, or corporation shall commence work upon said dam or system of dams, lock or system of locks, within five years from the date of securing the consent of the Federal government to do so, and shall complete the same within the time prescribed by the United States Government. No foreign corporation shall acquire the rights granted under this Article until it has complied with the laws of Alabama with reference to foreign corporations.

RIGHTS OF RIPARIAN OWNERS

Article 3 Title 38

Sec. 119. RIGHT OF RIPARIAN OWNERS TO BUILD WHARVES, DOCKS, ETC. - The owner of riparian lands upon navigable waters in the State of Alabama may install in front of their respective riparian lands, wharves, docks, warehouses, sheds, tipples, chutes, elevators, conveyors and the like for receiving, discharging, storing, protecting, transferring, loading and unloading freight and commodities of commerce to and from vessels and carriers, and may use their riparian lands in connection therewith and dredge out and deepen the approaches thereto, and may charge and collect reasonable tolls for the use thereof. All such structures are to be subject to such lines and limitations as may at the time of making such improvements be laid or placed by any authority of the United States, or of the State of Alabama, who may have authority to control harbor and pier lines. (Act No. 589, 1915 General Acts, p. 639, appvd. September 22, 1915.)

Sec. 120. STRUCTURES NOT TO OBSTRUCT NAVIGATION. - No such structure shall be built or maintained upon or over the lands of the State or lands underlying the navigable waters of the State, so as to in any wise unreasonably obstruct navigation, or the freedom of the use of the navigable waters of the State for commerce and navigation, or for harbor purposes; nor shall any charge be exacted of any vessel, barge, boat or raft, either singly or in fleets, for anchoring, mooring, or tying up or remaining on the navigable waters, presumptive or established, either or both of them, alongside of or on the lands of the State abutting thereon or thereunder, not then occupied by the structures and improvements placed thereon or therein pursuant hereto; or in the waters in front of said wharves and other structures so long as the reasonable use of said wharves and other structures occupying the lands of the State, or the aforesaid navigable waters of the State or the use of the approaches to said walls and other structures, or the coaling of vessels using same, is not unreasonably restricted, interfered with or prevented thereby; subject, however, to the further reservation and right of the legislature or other authority constituted by it for such purpose, to vacate or cause to be vacated and repossess or cause to be repossessed by the State so much of said riparian lands belonging to it, as may be at any time necessary for use by the State or Federal government in aid of navigation and commerce or for harbor purposes, or to insure the freedom and safety of navigation or the public or the property abutting upon the navigable waters of the State, but not other wise, and to that end may proceed under its right of eminent domain as to any structures thereon, so that the right of the State and the public may be preserved and insured under

Section 24 of Article 1 of the Constitution of Alabama. (Act No. 589, 1915 General Acts, p. 639, appvd. September 22, 1915.)

Sec. 121. TOLLS CHARGED SUBJECT TO REVISION BY LEGISLATURE. - All tolls, imposts, charges and duties authorized hereunder for the use of said wharves and other structures occupying the lands of the State or connected therewith, at all times hereafter, shall be subject to regulation and revision by the legislature or other authority now existing or hereafter created by it for such purpose, together with the right and authority of the legislature to fix and define or to delegate to an authority constituted by it the right and power to fix, define and prescribe reasonable tolls, imposts, charges and duties for the use of said wharves, and other structures, and to prevent unjust discriminations with respect thereto. (Act No. 589, 1915 General Acts, p. 639, appvd. September 22, 1915.)

Sec. 122. DEVELOPMENT AND RELIEF WORK UPON AND ABUTTING ON TIDE LANDS. - In order to encourage the building of bridges, causeways, and other development work and relief work, the owner of any lands in the State of Alabama abutting on tide lands, the title to which or control of which may now or hereafter be vested in the State of Alabama, which shall not have been improved by or under valid public authority and shall not be otherwise devoted to public use, shall be authorized to acquire such tide lands and to fill, reclaim or otherwise improve same and to fill in, reclaim or otherwise improve the abutting submerged land and to own, use, mortgage and convey the lands so reclaimed, filled or improved, and any improvements thereon, under and subject to the conditions and approval herein stated.

Any such improvement shall conform to any harbor line established at the time of such improvement by State or Federal authority having jurisdiction over such matters, or if not then already established, same shall conform to any harbor line stipulated by any such authority having jurisdiction on application by such riparian owner.

If such land shall be used for a bridge, road or causeway over navigable waters, or for bridge-head or approach thereto or for terminal facilities, depots, storage or sale yards, stores, warehouses, or wharves abutting on such bridge or road or causeway, the plans for such bridge, road or causeway shall be approved by the United States engineer officers or other Federal authority having jurisdiction, and by the Director of State Docks and Terminals and the Governor of Alabama, and when so approved and when improved pursuant to such approval the title to the said lands and the entire improvements thereon shall vest in such riparian owner without further approval when the bridge, road or causeway shall be constructed pursuant to the plans so approved.

If such improvement constructed or proposed shall not consist of a bridge, bridge-head, road or causeway, approach or related improvement included within this Section, title shall not pass to the riparian owner making or proposing such improvement unless and until the riparian owner shall have obtained the approval of the Court of County Commissioners or court of like jurisdiction of the county in which the land is situated, and of the Director of State Docks and Terminals and the Governor of Alabama, on application of such owner made after publication of ten days' notice thereof by a single publication in a newspaper published in the county in which the land is situated and shall have filed for record in the county a certificate of such approval executed and acknowledged by the presiding officer of said respective authorities. (Act No. 147, 1932 Ex. Sess., p. 167, appvd. October 26, 1932.)

Preceding Page BLANK - NOT FILMED

1940 CODE OF ALABAMA
RECOMPILED 1958

TOMBIGBEE-TENNESSEE WATERWAY DEVELOPMENT COMPACT

Title 38
Chapter 6

Sec. 123. COMPACT AUTHORIZED; TERMS. - The Governor on behalf of this State is hereby authorized to execute a Compact, in substantially the following form, with the State of Mississippi; and the legislature hereby signifies in advance its approval and ratification of such compact, which compact is as follows:

TOMBIGBEE-TENNESSEE WATERWAY DEVELOPMENT COMPACT

Article I. The purpose of this Compact is to promote the development of a navigable waterway connecting the Tennessee and Tombigbee Rivers by way of the east fork of the Tombigbee River and Mackeys and Yellow Creeks so as to provide a nine-foot navigable channel from the junction of the Tombigbee and Warrior Rivers at Demopolis in the State of Alabama to the junction of Yellow Creek with the Tennessee River at Pickwick Pool in the State of Mississippi, and to establish a joint interstate authority to assist in these efforts.

Article II. This Compact shall become effective immediately as to the states ratifying it whenever the States of Alabama and Mississippi have ratified it and Congress has given consent thereto. Any state not mentioned in this Article which is contiguous with any member state may become a party to this Compact, subject to approval by the legislature of each of the member states.

Article III. The states which are parties to this Compact (hereinafter referred to as "party states") do hereby establish and create a joint agency which shall be known as the Tennessee-Tombigbee Waterway Development Authority (hereinafter referred to as the "Authority"). The membership of which Authority shall consist of the Governor of each party state and five other citizens of each party state, to be appointed by the Governor thereof. Each appointive member of the Authority shall be a citizen of that state who is interested in the promotion and development of waterways and water transportation. The appointive members of the Authority shall serve for terms of four years each. Vacancies on the Authority shall be filled by appointment by the Governor for the unexpired portion of the term. The members of the Authority shall not

be compensated, but each shall be entitled to actual expenses incurred in attending meetings, or incurred otherwise in the performance of his duties as a member of the Authority. The members of the Authority shall hold regular quarterly meetings and such special meetings as its business may require. They shall choose annually a Chairman and Vice-Chairman from among their members, and the Chairmanship shall rotate each year among the party states in order of their acceptance of this Compact. The Secretary of the Authority (hereinafter provided for) shall notify each member in writing of all meetings of the Authority in such a manner and under such rules and regulations as the Authority may prescribe. The Authority shall adopt rules and regulations for the transaction of its business; and the Secretary shall keep a record of all its business, and shall furnish a copy thereof to each member of the Authority. It shall be the duty of the Authority, in general, to promote, encourage, and coordinate the efforts of the party states to secure the development of the Tennessee-Tombigbee Waterway. Toward this end, the Authority shall have power to hold hearings; to conduct studies and surveys of all problems, benefits, and other matters associated with the development of the Tennessee-Tombigbee Waterway, and to make reports thereon; to acquire, by gift or otherwise, and hold and dispose of such money and property as may be provided for the proper performance of their function; to cooperate with other public or private groups, whether local, state, regional, or national, having an interest in waterways development; to formulate and execute plans and policies for emphasizing the purpose of this Compact before the Congress of the United States and other appropriate officers and agencies of the United States; and to exercise such other powers as may be appropriate to enable it to accomplish its functions and duties in connection with the development of the Tennessee-Tombigbee Waterway and to carry out the purposes of this Compact.

Article IV. The Authority shall appoint a Secretary, who shall be a person familiar with the nature, procedures, and significance of inland waterways development and the informational, educational, and publicity methods of stimulating general interests in such developments, and who shall be the Compact administrator. His term of office shall be at the pleasure of the Authority, and he shall receive such compensation as the Authority shall prescribe. He shall maintain custody of the Authority's books, records, and papers, which he shall keep at the Office of the Authority, and he shall perform all functions and duties, and exercise all powers and authorities, that may be delegated to him by the Authority.

Article V. Each party state agrees that, when authorized by its legislature, it will from time to time make available and pay over to the Authority such funds as may be required for the establishment and operation of the Authority. The contribution of each party state shall be in the proportion that its population bears to the total population of the states which are parties hereto, as shown by the most recent official report of the United States Bureau of the Census, or upon such other basis as may be agreed upon.

Article VI. Nothing in this Compact shall be construed so as to conflict with any existing statute, or to limit the powers of any party state, or to repeal or prevent legislation, or to authorize or permit curtailment or diminution of any other waterway project, or to affect any existing or future cooperative arrangement or relationship between any Federal agency and a party state.

Article VII. This Compact shall continue in force and remain binding upon each party state until the legislature or Governor of each or either state takes action to withdraw therefrom; provided that such withdrawal shall not become effective until six months after the date of the action taken by the legislature or Governor. Notice of such action shall be given to the other party state or states by the Secretary of State of the party state which takes action. (Act No. 352, 1957 General Acts, p. 465, appvd. August 23, 1957.)

Sec. 125. POWERS OF GOVERNOR, MEMBERS OF AUTHORITY, COMPACT ADMINISTRATOR AND STATE OFFICERS. - There is hereby granted to the Governor, to the members of the Authority for Alabama, and to the Compact administrator all the powers provided for in said Compact and in this Chapter. All officers of the State of Alabama are hereby authorized and directed to do all things falling within their respective jurisdiction which are necessary or incidental to carrying out the purpose of said Compact. (Act No. 355, 1957 General Acts, p. 470, appvd. August 23, 1957.)

Sec. 126. WHEN CHAPTER TO BECOME EFFECTIVE. - This Chapter shall become effective immediately upon its passage and approval by the Governor, and when the State of Mississippi makes an appropriation of at least an equal amount to carry out the purposes of this Compact. (Act No. 355, 1957 Gen. Acts, p. 470, appvd. August 23, 1957.)

Preceding Page BLANK - NOT FILMED

TENNESSEE-MULBERRY WATERWAY COMMISSION

Title 38
Chapter 7

Sec. 127. ESTABLISHMENT; PURPOSE. - There is hereby established the Tennessee-Mulberry Waterway Commission. The Commission shall promote and develop a waterway system in the State of Alabama connecting Guntersville Lake on the Tennessee River with Bankhead Lake on the Warrior River, utilizing Mulberry Fork and Brown's Creek as parts of the water route so developed. (Act No. 883, 1961 General Acts, p. 1387, effective October 1, 1961.)

Sec. 128. MEMBERS OF COMMISSION; QUALIFICATIONS, ETC.; MEETINGS; CHAIRMAN AND VICE-CHAIRMAN; POWERS AND DUTIES OF COMMISSION. - The Commission shall be composed of five members appointed by the Governor. Each member shall be a citizen of the State and shall be interested in the development of waterways and water transportation in the State. At least two members shall be lawyers. Two members shall be appointed for terms of two years, two for terms of four years, and one for a term of six years. Vacancies shall be filled by appointment of the Governor for the unexpired term. Each member shall be entitled to actual expenses incurred in attending meetings, or incurred otherwise in the performance of his duties as a member of the Commission. The Commission shall hold regular quarterly meetings and such special meetings as its business may require. The Commission shall choose annually a Chairman and Vice-Chairman from among the members. The Secretary of the Commission (hereinafter provided for) shall notify each member in writing of all meetings of the Commission in such a manner and under such rules and regulations as the Commission may prescribe. The Commission shall adopt rules and regulations for the transaction of its business; and the Secretary shall keep a record of all its business, and shall furnish a copy thereof to each member. The Commission shall have power to hold hearings; to conduct studies and surveys of all problems, benefits, and other matters associated with the development of the said Waterway, and to make reports thereon; to acquire, by gift or otherwise, and hold and dispose of such money and property as may be provided for the proper performance of their function; to cooperate with other public or private groups having an interest in waterways development; and to exercise such other powers as may be appropriate to enable it to accomplish its functions and duties in connection with the development of said Waterway and to carry out the purposes of this Chapter. (Act No. 883, 1961 General Acts, p. 1387, effective October 1, 1961.)

Preceding Page BLANK - NOT FILMED

ELK RIVER DEVELOPMENT AGENCY

Title 38
Chapter 8

Sec. 131. ESTABLISHMENT. - In the interest of the unified development of the Alabama portion of the Elk River Watershed for purposes of cooperation with the Tennessee Elk River Area Development Agency, there is hereby authorized, and shall be established as hereinafter provided a state development agency for the Alabama Portion of the Elk River Watershed. The agency, when incorporated in accordance herewith, shall be an instrumentality of the State of Alabama. (Act No. 627, 1965 General Acts, p. 1142, appvd. August 26, 1965.)

NOTE: Effective on ratification of constitutional amendment. - Section 12 of the Act from which this Section is codified provides: "This Act shall become effective upon the ratification of an amendment to the Constitution of Alabama authorizing the legislature to enact laws providing for a public corporation to engage in the transactions and work provided for in this Act. THE AMENDMENT WAS PROPOSED BY ACTS 1965, NO. 471, AND RATIFIED ON DEC. 13, 1965.

Sec. 135. POWERS, DUTIES AND FUNCTIONS. - The powers, duties and functions of the Agency shall be as follows:

(b) Formulation and Executive of Development Plans

The Agency is authorized to:

(i) Investigate the resources of the Alabama portion of the Elk River Watershed and determine the requirements for its full development and for control and development of its stream system as an integral part of the economy of the area. (ii) Develop and carry out a unified, comprehensive program of resource development designed to encourage and assist the economic growth of the area. This program shall be consistent with plans for statewide economic development and with plans of Federal agencies for the development of the entire Elk River Watershed and with plans of Tennessee agencies for the development of the Tennessee portion thereof. (iii) In making such investigations and in formulating development plans, seek and utilize the assistance of appropriate Federal, State and local agencies and of private citizens and citizen organizations interested in the conservation of development of the resources of the area. (iv) Provide for the construction of water control structures, channel improvements, and facilities for navigation, drainage, irrigation, water conservation and supply,

industrial development, and recreation, as a part of comprehensive plans and, in aid of such activities, to accept loans, grants, or other assistance from Federal, State and local governments or from agencies of such governments. (v) Arrange with any city, county, municipality, or supplier of utilities, for the abandonment, relocation, or other adjustment of roads, highways, bridges, and utility lines.

(c) Land Acquisition

The Agency may acquire by purchase, lease, gift, or condemnation, property of any kind, real, personal, or mixed, or any interest therein, that the Board deems necessary or convenient to the exercise of its powers or functions; provided, that acquisition by condemnation shall be limited to land, rights in land, including leaseholds and easements, and water rights in the Alabama portion of the Elk River Watershed that the Board determines to be necessary to the control and optimum development of the Elk River. The amount and character of the interests in land, rights in land, and water rights to be acquired in such area shall be determined by the Board of Directors, and its determination shall be conclusive. The Agency's power of eminent domain may be exercised under Title 19 of the Code of Alabama, 1940, and any amendments thereto, or pursuant to any other applicable statutory provisions, now in force or hereafter enacted for the exercise of the power of eminent domain. The Agency is expressly authorized to acquire by condemnation or otherwise, and hold for resale to private or other industrial organizations, lands in the Alabama portion of the Elk River Watershed, that it determines to be suitable for industrial uses, and such acquisition is hereby declared to be for the public purpose of the State's industrial development and for the increase of industrial employment opportunities. Nothing herein shall be construed to authorize the acquisition by eminent domain of any real property or rights owned or controlled by railroads or utilities, both public or private.

(d) Management and Operation.

The Agency May:

(i) Enter into contracts with municipalities, corporations, other public agencies, or political subdivisions of any kind, or with others for the sale of water for municipal, domestic, agricultural, or industrial use, or of any other services, facilities, or commodities that the Agency may be in a position to supply. (ii) Develop reservoirs and shoreline lands for recreational use and provide for their operation for this purpose directly or by concessionaires, licensees, or vendees of shoreline lands. (iii) Sell or lease shoreline lands acquired in connection with development of the stream system for uses consistent with the Agency's development plan and subject to such restriction as the Agency deems necessary for reservoir protection and to such requirements as to (1) character of improvements or activities

and (2) time within which such improvements or activities shall be undertaken as the Agency deems appropriate to its overall development plan. (iv) Acquire or operate shoreline lands of reservoirs owned by the United States of America as the agent of the Federal agency having custody and control thereof under appropriate agreements with such agencies. (v) Acquire, construct, or operate such other facilities or works of improvement as are necessary to effectuate plans for comprehensive development of the area. (Act No. 627, 1965 General Acts, p. 1142, appvd. August 26, 1965.)

NOTE: Other subsections under Section 135 are not shown because they do not pertain to water control operation.

Preceding Page BLANK - NOT FILMED

1940 CODE OF ALABAMA
RECOMPILED 1958

ALABAMA RIVER DEVELOPMENT AUTHORITY

Title 55
Article 6B

Sec. 373(6f). IMPORTANCE OF WATER RESOURCES: PURPOSE AND CONSTRUCTION OF ARTICLE. - The legislature finds that Alabama's water resources have become a factor of major importance in connection with the further industrial development and economic expansion of the State, and that in order to promote the economic development of the State, and to secure for the people of the State the benefits to be derived therefrom, it is necessary to exploit to the fullest the waterways potential of Alabama. It is, therefore, the purpose of this Article to create the Alabama River Development Authority, and to vest in such Agency responsibility for promoting the development of the rivers and waterways of this State. In order to attain these ends, the legislature declares that this Article shall be liberally construed. (Act No. 618, 1957 General Acts, p. 887, appvd. September 18, 1957.)

Sec. 373(6g). CREATION OF AUTHORITY; MEMBERS; MEETINGS; SEAL; RULES AND REGULATIONS; COMPENSATION. - There shall be an Alabama River Development Authority, which shall be composed of the members of the State Planning and Industrial Development Board. The members of the Authority shall hold regular meetings at least once each month, and may hold special meetings at the call of the Chairman; but no member of the Authority shall receive pay and allowances for more than fifty (50) days during any calendar year. The Authority may have an appropriate seal with such words and emblem as it may prescribe. The Secretary shall notify each member in writing of all meetings of the Authority in such manner and under such rules and regulations as the Authority may prescribe. The Authority shall adopt rules and regulations for the transaction of its business; and the Secretary shall keep a record of all its proceedings, and upon request, shall furnish a copy thereof to each member of the Authority. The members of the Authority shall receive the same compensation for their services as that provided in Section 373(6a) of Title 55. (Act No. 618, 1957 General Acts, p. 888, appvd. September 18, 1957.)

Sec. 373(6i). POWERS AND DUTIES. - The Alabama River Development Authority shall have the following powers and duties:

(1) To investigate and make studies and surveys relative to the river system of the State of Alabama, and to seek to secure the development of an inland waterway system for the State, and make a report of such surveys and studies to the Governor and the legislature.

(2) To contract with county and municipal governments on a matching basis in order to make studies and surveys of the river system of the State.

(3) To cooperate with State and local chambers of commerce, industrial development boards, or other local, State, region, or national governmental agencies, groups, associations, or organizations, having an interest in river development; and to encourage and coordinate the efforts of other public and private organizations or groups of citizens to secure the development of the rivers of this State.

(4) To aid in securing the enactment of Federal legislation in support of river development; to attempt to secure for Alabama the full amounts of any Federal funds which may be appropriated for river development purposes within the State; and, toward the ends mentioned herein, either to establish an office in Washington, D.C., or to employ representatives located in such City, in order to maintain liaison with the appropriate Federal agencies and departments.

(5) To promulgate such reasonable rules and regulations, consistent with the laws of this State, as may be necessary to carry out the provisions of this Article.

(6) To exercise such other powers as may be appropriate to enable it to accomplish its functions and duties in connection with the promotion, planning, and engineering of river and waterway development in this State and to carry out the purposes of this Article. (Act No. 618, 1957 General Acts, p. 889, appvd. September 18, 1957.)

1940 CODE OF ALABAMA
RECOMPILED 1958

BEAR CREEK DEVELOPMENT AUTHORITY

Title 55
Article 6D

Sec. 373(6x). DEFINITIONS. - The following words and phrases used in this Article, and others evidently intended as the equivalent thereof, shall, in the absence of clear implication herein otherwise, be given the following respective interpretations herein:

"Watershed" means and includes all land in the Counties of Marion, Colbert, Franklin and Winston, lying within fifteen miles of Bear Creek and any of its tributaries. (Act No. 584, 1965 General Acts, p. 1080, appvd. August 26, 1965.)

NOTE 1: Other definitions under this Section are not pertinent to this treatise.

NOTE 2: Effective on ratification of constitutional amendment. - Section 21 of Acts 1965, No. 584, approved August 26, 1965, provides: "This Act is intended to implement the provisions of an amendment to the Constitution of Alabama, as proposed by the current session of the legislature, relating to the subject expressed therein, and is enacted pursuant thereto. If the constitutional amendment is ratified, this Act shall thereupon become effective immediately; if the proposed amendment is not ratified, this Act shall have no effect." Amendment 247 was proposed by Acts 1965, No. 470, submitted November 30, 1965, and proclaimed ratified December 13, 1965. (Proclamation Record, Volume T, p. 27.

Sec. 373(6y). ESTABLISHMENT. - In the interest of the unified development of Bear Creek and its tributaries and watershed, for the purposes of navigation, water conservation and supply, flood control, irrigation, industrial development, public recreation and related purposes, there is hereby authorized, and shall be established as herein-after provided, a development authority for the Alabama portion of the Bear Creek Watershed. The Authority, when incorporated in accordance herewith, shall be a public corporation and a political subdivision of the State of Alabama, composed of a Board of Directors selected and empowered as herein-after provided. (Act No. 584, 1965 General Acts, p. 1080, appvd. August 26, 1965.)

NOTE: Dependent upon constitutional ratification as noted under Section 373(6x).

Sec. 373(6cc). POWERS AND DUTIES OF AUTHORITY. - The general powers, duties, and functions of the Authority shall be as follows:

(a) General.

The Authority:

(1) Shall have perpetual succession in its corporate name; (2) may sue and be sued in its corporate name; (3) may adopt, use, and alter a corporate seal, which shall be judicially noticed; (4) may enter into such contracts and cooperative agreements with Federal, State, and local governments, with agencies of such governments, and with private individuals, corporations, associations, and other organizations, including the Bear Creek Watershed Association, Inc., whether organized under the laws of Alabama or of another state, as the Board may deem necessary or convenient to enable it to carry out the purposes of this Article, which authorization shall include without limitation contracts and cooperative arrangements with any of the several states, and with counties and municipalities in and agencies of such states; (5) may adopt, amend, and repeal by-laws; (6) may appoint managers, officers, employees, attorneys, and agents as the Board deems necessary for the transaction of its business, fix their compensation, define their duties, and require bonds of such of them as the Board may determine, the salaries of any such employees to be paid out of such funds as may be available to the Authority from any source.

The Authority may institute legal proceedings in any court of competent jurisdiction and proper venue; provided, that the Authority may not be sued or subjected to a counterclaim, cross-claim, set-off or recoupment in any court other than the courts of Franklin County, Alabama; and provided, further, that the officers, directors, agents and employees of the Authority may not be sued or subjected to a counterclaim, cross-claim, set-off or recoupment for actions in behalf of the Authority in any court other than the courts of Franklin County, Alabama; and provided, further, that no claim or cause of action, based wholly or in part upon allegations which call into question the validity of the Authority, shall be heard or adjudicated in any court other than the courts of Franklin County, Alabama.

(b) Formulation and Execution of Development Plans.

The Authority is authorized to:

(1) Investigate the resources of the Bear Creek Watershed and determine the requirements for its full development and for

control and development of its stream system as an integral part of the economy of the area; (2) develop and carry out a unified, comprehensive program of resource development designed to encourage and assist the economic growth of the area, which program shall not be inconsistent with official programs for statewide economic development; (3) provide for the construction of water control structures, channel improvements, and other facilities for navigation, drainage, irrigation, water conservation and supply, industrial development, recreation and related purposes, as a part of comprehensive plans; (4) arrange with the State and with any city, county, municipality, or supplier of utilities, for the abandonment, relocation, or other adjustments of roads, highways, bridges, and utility lines; (5) in making investigations and in formulating and executing development plans, seek and utilize the assistance of appropriate Federal, State, and local governments or from agencies of such terms, provisions, and conditions as the Board in its discretion deems to be necessary, proper, or advisable for the purpose of obtaining such loans, grants, or other assistance.

(d) Management and Operation.

The Authority may:

(1) Enter into contracts with the United States, with the several states and with individuals, private corporations, associations, municipalities, and other public agencies, or political subdivisions of any kind, for the sale of water for municipal, domestic, agricultural or industrial use, or for the sale of any other services, facilities or commodities that the Authority may be in a position to supply; (2) acquire and develop reservoirs and shoreline lands and provide for their operation for industrial, recreational, and other uses directly or by concessionaires, licensees, lessees, or vendees of shoreline lands; (3) sell or lease shoreline lands, or any interest therein, in connection with development of the stream system, for uses consistent with the Authority's development plan and subject to such restrictions as the Authority deems necessary for reservoir protection and subject to such requirements as to character of improvements and activities and the time within which such improvements or activities shall be undertaken as the Authority deems appropriate to its over-all development plan; (4) acquire or operate shoreline lands of reservoirs owned by the United States of America, as the agent of the Federal agency having custody and control thereof under appropriate agreements with such agencies; (5) acquire, construct, or operate such other facilities or works of improvement as are necessary to effectuate plans for the comprehensive development of the area; (6) make and enforce reasonable rules and regulations governing the use of any facilities and other property owned, controlled or operated by the Authority; (7) provide for such insurance as the Board may deem advisable; (8) to fix and revise from time to time reasonable rates, fees and other charges for the sale of water for municipal, domestic, agricultural or industrial use, or for the sale of any other services, facilities or commodities that the Authority may be in a position to supply.

NOTE: Other subsections under Section 373(6cc) are not set out in that they pertain to matters other than water regulation or control.

Sec. 373(6pp). ARTICLE SUPPLEMENTAL TO OTHER LAWS; LIBERAL CONSTRUCTION. - This Article shall be considered supplemental and additional to any and all other laws and confers sufficient power in and of itself for the purposes set forth herein. This Article shall be liberally construed to effectuate its purpose of facilitating the development of the resources of the Bear Creek Watershed. (Act No. 584, 1965 General Acts, p. 1080, appvd. August 26, 1965.)

NOTE: Other subsections under this Article are omitted because they do not pertain to water control operations.

PART THREE

ALABAMA SUPREME COURT CASES PERTAINING
TO THE USE OR CONTROL OF
WATER AND WATERWAYS

RIPARIAN AND LITTORAL RIGHTS

THE RIPARIAN RIGHTS DOCTRINE

The right to the use of water in its natural state is appurtenant to the ownership of land underlying the water or through which it flows. This is the fundamental principle of the "Riparian Rights Doctrine" - the Doctrine that forms the "essential point of beginning" to an understanding of water rights law.

"Riparian rights" are commonly misunderstood as limited to the right of an owner of land bordering a watercourse to use and consume water therein. More accurately, the term refers to the rights of a landowner in or to the banks, bed and waters of a watercourse or any other body of water in or on or under his land. (A watercourse is a body of water flowing generally in a well-defined channel on or below the surface of the earth. The channel may sometimes be dry and the water may at some point, spread over level ground without a definite shoreline before flowing again in a channel, without losing its identity as a watercourse.)

The title to land bounded by a watercourse includes the bed of the stream to the thread or center of the main channel, unless, in the land-owner's instrument of title, there appears a clause which limits the boundary to the bank or some other designated point.

The Supreme Court of Alabama has stated that the bed of a non-navigable stream belongs to the owner of the land through which it runs. City of Birmingham v. Lake, 243 Ala. 367, 10 So. 2d 24 (1942). In any case, the State has no title to the bed of a non-navigable stream, unless it owns the land upon or through which the stream runs. Hood v. Murphy, 231 Ala. 408, 165 So. 219 (1946). NOTE: This case is briefed later on under Part Three.

The modern "Riparian Rights Doctrine" may be referred to as the "natural-flow-subject-to-reasonable-use" doctrine. In other words, the right of every riparian owner is to enjoy the natural flow of the watercourses which traverse his land, unimpaired in quality and undiminished in quantity, except to the extent necessarily resulting from a reasonable use of such watercourses by other riparian owners. Mobile Docks Co. v. Mobile, 146 Ala. 198, 40 So. 205 (1906). The right to use the water in a reasonable manner is common to all riparian proprietors. Elmore v. Ingalls, 245 Ala. 481, 17 So. 2d 674 (1944).

As a matter of law, riparian rights may not be conveyed to non-riparian landowners except by conveyance of riparian land. American Tar Products Co. v. Jones, 17 Ala. App. 481, 86 So. 113 (1920). NOTE: This case is briefed under the topic: "Pollution" in Part Three of this Book.

There is no question that the construction of an obstruction which serves no useful purpose or of a useful obstruction which unreasonably imposes upon the rights of other riparian owners may be restrained by injunction. One who creates such an obstruction is also liable in damages for any injury caused thereby. Barber Pure Milk Co. v. Young, 38 Ala. App.13, 81 So.2d 324 (1955). The liability of one who obstructs a watercourse is not based upon negligent conduct, nor does it depend upon substantial actual damages, but upon unauthorized infringements of the rights of other riparian landowners. Mobile & O. R. Co. v. Red Feather Coal Co., 218 Ala. 582, 119 So.606 (1928).

DEFINITIONS

RIPARIAN:	Belonging or relating to the bank of a river; of or on the bank. (Land lying beyond the natural watershed of a stream is not "riparian.")
LITTORAL:	Corresponding to riparian proprietors on a stream or small pond are littoral proprietors on a sea or lake.
RIPARIAN OWNER:	A riparian proprietor; one who owns land on the bank of a river.
RIPARIAN PROPRIETOR:	An owner of land, bounded generally upon a stream of water and as such having a qualified property in the soil to the thread of the stream with privileges annexed thereto by law.
RIPARIAN RIGHTS:	The rights of the owner of land on the banks of watercourses, relating to the water; its use, ownership of soil under the stream, accretions, etc. <u>Mobile Transp. Co. v. Mobile</u> , 128 Ala. 335, 30 So.645, 64 L.R.A. 333, 86 Am. St.Rep. 143 (1900).
RIPARIAN WATER:	Water which is below the highest line of normal flow of the river, or stream, as distinguished from flood water.

RIPARIAN AND LITTORAL RIGHTS

The boundary line of land bordering on a navigable river is the margin of the water at the ordinary stage. Williams v. Glover, 66 Ala. 189 (1880).

The rights of riparian owners on navigable streams are immutable, and subject only to the exercise of eminent domain. Mobile Transp. Co. v. City of Mobile, 153 Ala. 409, 44 So. 976 (1907).

1. ACCESS TO WATERS IN GENERAL

The principle that supports right of riparian owner on navigable waters to obtain an access thereto, does not give owner any title to lands by which he obtains such access. United States v. Turner, 175 F. 2d 644 (1949). In addition: The right of a riparian owner on navigable waters to obtain access thereto exists only as a way of necessity to reach navigation.

Although riparian right of access as way of necessity to reach navigable portion of the water, including right to fill in over the shore, existed in Alabama that right could not ripen to title of submerged lands against the State and its grantee, and it did not exist where filling was done under necessity to reach, or for the purpose of reaching, deep water.

The public has right of passage to navigable water by public road thereto. Howard v. State, 23 Ala.App. 228, 124 So. 912 (1929).

Leasing by State of tract of land under shallow water of Mobile Bay to oil company, and filling in of leased land by lessee did not interfere with river access rights of owners of bay shore property even though the fill would block any straight-line passage to adjacent river, where owner's land faced on bay and access to the river could be obtained through the bay. State v. Argiro, 273 Ala. 44, 134 So. 2d 209 (1961).

2. INJURIES TO RIPARIAN RIGHTS BY IMPROVEMENTS OF CHANNELS AND STREAMS

Persons acquiring and improving land adjacent to navigable waters do so subject to obstruction of drainage of surface waters resulting from the public right to improve and use the stream. Lynn v. United States, 110 F. 2d 586 (1940).

3. INJURIES TO RIPARIAN RIGHTS BY CONSTRUCTION

Riparian owner has a right of enjoyment of natural flow of river without burden of hindrance imposed by artificial means. Public easement interfering with the natural flow of river cannot arise without a grant or dedication save by condemnation with appropriate compensation for private right. Jacobs v. United States, 45 F. 2d 34 (1930).

4. INJURIES TO RIPARIAN LANDS BY FLOTAGE OF LOGS

One showing injury to his land from the negligence of a lumber company in floating logs, is entitled to nominal damages where the logs accumulated in large mass against boom posts near premises of owner's mill and adjacent land, breaking a dam and diverting water so that his land is flooded. Gulf Red Cedar Co. v. Walker, 132 Ala. 553, 31 So. 374 (1902).

5. SHORES AND BANKS

The Congress of the United States does not possess the constitutional power to grant the shore of the navigable waters in the State of Alabama. City of Mobile v. Eslava, 9 Port. 577 (1839); Kemp v. Thorpe, 3 Ala. 291 (1942).

The rights of riparian owners on navigable tidal waters and on navigable nontidal waters are the same as to the use of the shore, except that in the case of riparian owners on navigable tidal waters the title extends to the mean high water mark, and in the latter case to the line of mean low water. Mobile Transp. Co. v. City of Mobile, 153 Ala. 409, 44 So. 976 (1907).

6. ISLANDS AND SANDBARS

As for property on Pinto Island in Mobile Bay: Fact that riparian rights do not extend to submerged lands located in a body of water that was concededly navigable although portion of land to which claim was sought was covered by water too shallow for actual navigation; title to the submerged land belongs to the State with riparian rights inferior to the rights of the State save the access the owner has to navigable waters. United States v. Turner, 175 F. 2d 644 (1949).

7. WHARVES, DOCKS, PIERS, ETC.

Riparian owners have the right at common law to dock out to navigable water on all waterways, whether tidal or not, subject to the

rights of navigation and the rules of public control. Mobile Transp. Co. v. City of Mobile, 153 Ala. 409, 44 So. 976 (1907).

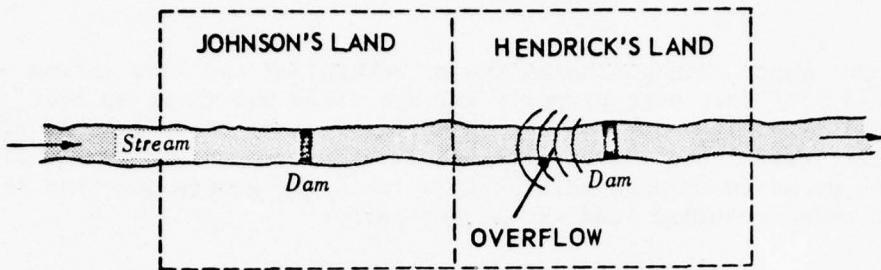
A riparian proprietor, whose land is bounded by a navigable stream, has a right of access to the navigable part thereof in front of his land, and to construct a wharf, pier, or piles projecting into the stream for his own use or the use of others, but this right is subject to such rules and regulations as the legislature may prescribe for the protection of the public. Also this right is subject to the paramount right of the United States under its constitutional authority. McDonnel v. Murnon Shipbuilding Corporation, 210 Ala. 611, 98 So. 887 (1914).

8. APPROPRIATION AND PRESCRIPTION

The uniform and uninterrupted use of water from a running stream for a period of 20 years gives a title by prescription. Stein v. Burden, 24 Ala. 130 (1854). NOTE: This case is briefed under Part Three.

The enjoyment of the waters in a stream by a riparian proprietor in substantially the same manner for over 10 years, with the knowledge of the lower riparian proprietor and without interruption, raises a presumption of title as against a right of the lower proprietor, which during that period might have been, but was not asserted. Alabama Consol. Coal & Iron Co. v. Turner, 145 Ala. 639, 39 So. 603 (1905). NOTE: This case is briefed under Part Three of this Book.

HENDRICK V. JOHNSON
6 Port. 472(1838)



GENERAL PROPOSITION RELATING TO RIPARIAN RIGHTS

1. The right to the use of the water of a stream is common to all the adjacent land owners on its course, and is incident to their possession.
2. One may acquire exclusive use of the water providing he has the consent of all other riparian owners.
3. By the rules of common law, all riparian proprietors have precisely the same rights to waters flowing through their domains, and one can never be permitted to so use the stream as to injure or annoy those who are situated either above or below him.
4. The riparian owner (J) nearest the source may erect any dam so long as he doesn't affect those below him. This relative right he gains by his location relative to the source of the stream.

From the facts of this case, Johnson sought to have Hendrick's dam removed because the overflow caused by it was injurious to his dam. But Hendrick acted under the sanction of statute in erecting his dam for milling purposes and Johnson could not, after Hendrick's had started work, start erecting a dam which would be thus injured and expect any relief from the court. Had Johnson's mill already been established when Hendrick started building his dam, then Hendrick's work, had it injured Johnson, could be stopped.

This case is important for the general rights of riparian proprietors.

ABBOT'S EX'R v. DOE ex dem. KENNEDY
5 Ala. 393 (1843)

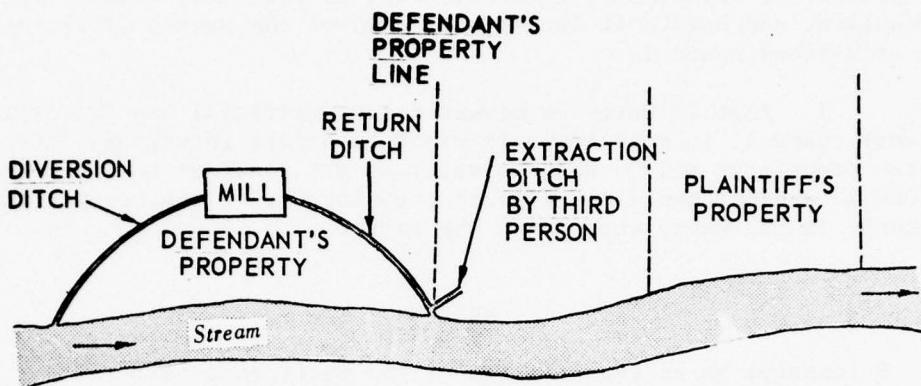
FACTS: One party here purchased one or several of the lots carved out of the old Fort Charlotte property and his title was to go to the shore, which is high water mark on a navigable body of water. As time passed the "water lots" were reclaimed by accretion and reliction of the water so as to enlarge this party's lot. The government then tried to grant this reclaimed land to another party.

QUESTION: May such a grant be made thereby destroying the original owner's riparian rights, or is he, the original owner, entitled to this newly formed land?

ANSWER: The newly formed land, an alluvion, is the property of the original purchaser of the shore lots.

REASONS: It is a well settled principle of the common law, that a person whose land is bounded by a stream of water which changes its course gradually by alluvial formations, shall still hold by the same boundary, including the accumulated soil. Accretion from natural causes becomes the soil of the riparian proprietor, and his limits extend or diminish accordingly as the water may recede or trench upon his land. The sovereign power can make no disposition of the shore, by grant, or otherwise, prejudiced to the rights of those for whom it is held in trust. By granting the land of Fort Charlotte to the shore, the government impliedly stipulated with the purchaser, that the shore should be his boundary, subject only to such changes as might be made by accretion or reliction.

STEIN v. BURDEN
29 Ala. 127 (1956)



Defendant Stein diverted water from creek for his mill by a ditch and he made provisions to return the water by the same method, which would have not affected Plaintiff's water flow down stream. But a third person dug a diversion ditch off Stein's return ditch at the point where the ditch intersected with the creek, on his (the third person's) land. Plaintiff brings action against Stein because the water flow onto his land has been virtually abolished.

ISSUES: Whether a riparian proprietor, who diverts water for his mill, but returns it to its original stream, so as not to injure the proprietor below him, is responsible for a diversion caused by a third person, who intersects the artificial channel provided for the restoration of the water, just at its mouth, on his own land. (Is the diversion at the peril of the one who diverts?)

BASIC ISSUE: What property has a riparian proprietor in the water which flows through or by his land?

BASIC UNDISPUTED PRINCIPLE OF LAW: "He who diverts water from its natural course, must restore it to its original channel, without material diminution."

The following propositions are established by this case:

1. That each riparian proprietor has the right to use the water which flows from or through his lands, for all ordinary purposes, and for the gratification of natural wants.

2. That such proprietor has also the right to the extraordinary or artificial use of the stream and the water composing it, provided that, by such use, the water is not forced back on the land of the proprietors above, is not unreasonably and injuriously precipitated on the lands of the proprietor below, and, after its use, is restored, without material diminution, and before it leaves the lands of the person diverting, to its accustomed channel.

3. That if water be diverted for artificial use from its natural channel, in quantity sufficient to affect injuriously the rights of the proprietor below, and the water be not returned to its channel before it reaches the lands of such proprietors, he may recover damages thereof, of the party who causes the injury.

REASONS

Evidently, as to such portion of the water as a party, under the above rules, may use in the gratification of ordinary wants, and a portion of which, in the nature of things, will perish in the using, no question can arise on the duty to restore. This is, generally, a use of the water itself, as severed and contradistinguished from the stream. This use is one of the incidents of riparian proprietorship, and does not trench on the freehold interests of the owners below.

The right to the stream, or the water in its aggregate character, is a different question. It consists of the body of water which at any and all times rests on and flows over the lands of the claimant. The stream is part of the freehold. This freehold character is not lost, though the particular water which composes the stream is continually changing. Every owner has a property in the stream that flows through his land; while he has no property in the water of which it is composed, save for the gratification of his natural or ordinary wants as above shown.

A right to the use of a stream being a part of the freehold interest, that right is co-existent with the right to the land over which it flows. Diversion of the water of the stream is an act continuous in its character; and each effluence of the water, resulting from the unauthorized act of another, is a wrong done to a proprietor below, if thereby the flow of the stream to him is to him materially diminished. Each successive flow being a new wrong, a nuisance continued, imposes a corresponding contemporaneous obligation to return such water to the channel of the stream.

The argument, then, that a party who diverts water, and provides the means for its return, may then rest - that he may then continue to obstruct large quantities of water, which water is not in fact restored to its accustomed channel, cannot be supported. It is no answer that

that the water would have continued to flow back into the stream, had not a stranger, by his unauthorized interference, rendered the means provided powerless to accomplish the object. He obstructs the water at his peril. His right to do so is not an absolute, but a qualified right. It only becomes a right, when by restoration, it ceases to work an injury to another. This rule under the circumstances is not a severe one. It only enjoins that the assumed right to obstruct shall be abandoned, whenever the water cannot be returned.

CRABTREE v. BAKER
75 Ala. 91 (1883)
(General proposition of law established by this Case)

"It is well settled by a uniform course of decision, English and American, that the proprietor of lands, over or through which a stream of water usually flows in a definite channel, having a bed, sides or banks, and usually discharging itself into some other stream or body of water," had a clear legal right, not derived from or dependent upon prescription or long continued use, but a right as a matter of law and as an incident of the ownership of the land, to the use of the water flowing in the stream, as it is accustomed to flow, without detrimental diminution or alteration.

ULBRICHT v. EUFAULA WATER CO.
86 Ala. 587, 6 So.78 (1888)

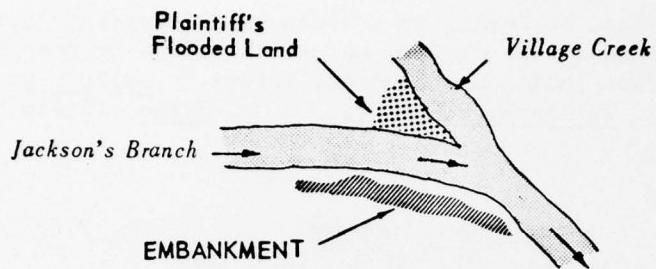
FACTS: Ulbricht filed a complaint as a riparian owner to enjoin the appropriation of the water from a running stream, diverted by the Eufaula Water Co., which is also a riparian owner on the stream. The Water Co., an upper riparian owner, constructed a dam and reservoir, and diverted a large quantity of water.

COURT DECISION: Here, the Water Co. has diverted the water from the stream, and consumes it for the purpose of supplying the wants of a neighboring town. The diversion is rendered unlawful by the fact that it is for an extraordinary or artificial use, and is not restored to its natural channel, where it is accustomed to flow. No person has the right to cause such a diversion and such is a wrongful act for which an action will lie by the lower riparian proprietor without proof of special damages.

The mere non-use of a water power (here complainant was not using the stream in any visible way) by a riparian owner will not operate to impair his title, or confer any rights thereto on another. He has a legal right to have the stream to continue to flow through his land, irrespective of whether he may need it for any special purposes or not.

Every riparian proprietor has a right to the reasonable use of the water; but this right, which is a real or corporeal hereditament, in the nature of an easement, is not an absolute right of property, but is qualified by the equal rights of other riparian owners.

SLOSS-SHEFFIELD STEEL & IRON CO. v. MITCHELL
167 Ala. 226, 52 So.69 (1909)



FACTS: Defendant riparian owner constructed embankments on above streams at the points indicated thereby causing above mentioned creeks to overflow onto plaintiff's land, which was situated near the junction of said creeks.

COURT DECISION: The court held that a riparian owner upstream may not so erect barriers along the stream that would inflict injury upon one's land below, if that one be a riparian owner too.

GREENFIELD v. POWELL
218 Ala. 397, 118 So.556 (1928)
(General proposition of law established by this Case)

"A grant of land bordering on a non-navigable stream carries to the center or thread of the stream, unless the terms or the circumstances of the grant indicate a contrary intent." Bullock v. Wilson, 2 Port.436 (1835), Tallassee Falls Mfg. Co. v. State, 13 Ala. App.623, 68 So.805 (1915).

HOOD v. MURPHY
231 Ala. 408, 165 So.219 (1936)

FACTS: Complainant owns land on both sides of the Cahaba River, a small fresh water, non-navigable river. Complainant has built a dam entirely across the river on her land some 60' north of her South boundary. In this 60' from complainant's dam to her South boundary are good fishing waters and the defendant has been entering the stream below the line of her property on land she did not own in order to fish in this 60' strip of water.

Defendant contends by authority of an Act of March 18, 1933 (Acts, 1933, Ex. Sess., p. 67) which declared that all waters of this State are public if they flow through the lands of more than one person, gave him the right to fish on this strip. Complainant's land was posted and the Act referred to stated that "before any person may go or be upon the posted lands of another for the purpose of fishing he or she shall procure the consent of the landowner or his agent."

Complainant-Appellee filed a bill in equity for an injunction to prevent trespassing on her property be entering upon it against her will and protest for the purpose of fishing in the Cahaba River.

COURT DECISION: The Court held that the Act referred to applied only to those waters over beds which are owned by the State. If the Act was held to apply to non-navigable streams, so as to vest in the State the beds of such streams the legislature would be taking away property rights secured by the Constitution, and this, clearly, the legislature may not do.

The owner of this land has the exclusive fishing rights in non-navigable streams running through it. This is an incident of ownership of the land, subject to the right of the State to regulate fishing so as to preserve the fish for the good of the public in general.

ROLLAN v. POSEY
271 Ala. 640, 126 So.2d 464 (1961)
(General proposition of law established by this Case)

Proceeding in equity to establish a disputed boundary line.

Where complainant's deed recited that the boundary ran to Autauga Creek, non-navigable because being above tidewater it is *prima facie* not a navigable stream, and the words in the deed did not exclude land under water, the thread of middle of the stream was the boundary line between land on either side of the stream.

HILL v. DAVIS
272 Ala. 166, 130 So.2d 39 (1961)
(General proposition of law established by this Case)

Easement permitting water backed up by dam on grantee's land to overflow upon grantor's land was deemed to carry with it the right to fish and use the shore to enjoy full use of water and fishing privileges, where grantor had allowed such fishing privileges for 31 years before attempting to bar grantees and their successors from access to a portion of the lake lying on grantor's land.

BROWN v. ALABAMA POWER CO.
275 Ala. 467, 156 So.2d 153 (1963)
(General proposition of law established by this Case)

When one is granted by instrument in writing based on sufficient consideration a right to overflow or back water upon the land of another, an easement to flood is thereby created; the holder of the easement has the dominant estate and the owner of the land possess the servient estate. The owner of the servient estate must abstain from acts interfering with proper enjoyment of the easement by the owner of the dominant estate.

The erection of a house or cottage on land on which the power company owned flowage easement or easement to flood the land was enjoined where the water would cover a portion of the structure.

9. ACCRETION AND ALLUVION

Accretion is the process of gradual and imperceptible addition to riparian lands caused by the action of the water in washing up sand, earth, gravel, or other materials. The land formed as a result of the process of accretion is termed alluvion.

"Reliction" differs from "alluvium" in that reliction is applied to land made by the withdrawal of the waters which cover it.

(a) Division of Land Formed by Accretion:

Where accretions form along the bank or shore in front of the premises of several adjoining proprietors, the new land is to be divided among them in proportion to their relative frontage on the original bank or shore, or, according to another rule, by extending their side lines forward at right angles with the middle thread of the stream.

(b) Title to Alluvion:

Land formed by accretion belongs to the riparian owner on or against whose bank or shore the alluvial matter is deposited.

The right of accretion is a riparian right [(Pippen v. Carpenter, 208 Ala. 1, 93 So. 878 (1922))] and the riparian right to future alluvion is a vested right.

(c) Reliction or Dereliction:

"Reliction" and "dereliction" are terms applying to the gradual withdrawal or recession of waters, or to the recession of water leaving land uncovered. The same general rules apply to reliction or dereliction as to accretion; and land exposed by this process belongs to the riparian owner from whose shore or bank the water has receded. The right to acquisition through a reliction is a riparian right. Before a riparian owner can claim title to his lands as a result of reliction, such reliction must be of a permanent nature, without the possibility of the water again filling in or covering the rellicted area.

(d) Avulsion:

"Avulsion" is the removal of a considerable quantity of earth from the land of one proprietor and its deposit on, or annexation to, the land of another suddenly and by the perceptible action of the water, perceivable while the change is going on, or the sudden and rapid change of the channel of the stream which is the boundary, whereby it abandons its old and seeks a new bed.

GREENFIELD v. POWELL
220 Ala. 690, 127 So.171 (1930)
(General proposition of law established by this Case)

This case held that the same earth need not be transferred from one side of the channel to the other, but that a new channel must be made so that on the forming side the change is as distinct and perceptible as on the other side, and the new bank produced by the same general cause.

10. OWNERSHIP OF BED OF STREAM

Ordinarily the bed of a non-navigable river or stream belongs to the riparian owners. City of Birmingham v. Lake, 243 Ala. 367, 10 So. 2d 24 (1942). Where such stream or river flows over the land of a private owner, he has title to the whole bed of the stream within the boundaries of his land, subject to the exceptions and burdens to which such ownership is subject, while if such a stream or river forms the boundary between the lands of two proprietors, each owns the land under the stream. Ownership of the land may be acquired by prescription. Such ownership is private, and in severalty, and such public rights as exist are simply easements or privileges, so that as a general proposition the owner may do what he pleases with the land under the water as long as he does not interfere with the public enjoyment. Hood v. Murphy, 231 Ala. 408, 165 So.219 (1936). A riparian owner on a non-navigable stream may construct therein, in front of his land, anything he pleases to the thread of the stream, unless it injures some other riparian owner or affects the public. So, the owner of land covered by water may erect any structure he sees fit on piles driven into the bed of the stream, provided he does not dam the water back on upper owners, or interfere with the flow of the stream to those below. The owners of the bed of a non-navigable stream have a right to control that part of the surface of the water of the stream that lies above the bed of the stream owned by them.

APOLINSKY, THE DEVELOPMENT OF RIPARIAN LAW IN ALABAMA
12 Ala. L. Rev. 172 (1960)

Because of the needs of new industry, the doctrine of riparian rights applicable in pollution cases changed around 1880 from an apparent natural flow to a reasonable use concept. The adoption of the reasonable use theory prevented the individual riparian from prohibiting by injunction the pollution of a stream by an industrial riparian. However, this theory did not prevent the riparian from obtaining damages at law for any substantial injury. Certainly the denial of injunctive relief gives the industrial riparian the right of eminent domain, but it cannot be denied that Chief Justice Stone in the Clifton Iron Co. case was singularly prophetic in foreseeing the impact which the iron and steel industry was to have on the economy of Alabama.

Pollution would seem to be the only major problem facing the riparian proprietor at the present time. The question of whether he can expect to enjoin the industrial polluter is not settled by the Elmore and Montgomery Limestone Co. cases. In both cases, the appeals were taken from ruling on demurrers to the bills and it would seem that any balancing of interests would take place after this procedural stage. The problem of forcing the industrial user to close his facilities would not be apparent at the time of the ruling on the demurrer. Whether the interests should still be balanced is a pertinent question. It is probably that the iron and steel industry in its embryonic stage needed this protection because it could not operate otherwise. Because of technological advances within the industry, this may not be the case today. Stopping pollution would no doubt require additional expenditures of capital, but the cattle industry is growing rapidly in the State and needs clean water; and more people are becoming interested in and are participating in sports involving water that should be unpolluted. Can these activities which are in their embryonic stage of development expect to be protected from the industrial abuses as the iron and steel industry was protected? Monetary compensation through damages may not be enough.

The riparian today is also hampered in collecting other than nominal damages where multiple industrial polluters are involved, though he proved substantial injury. If an industrial defendant can show that others are polluting the stream, the injured riparian, in order to recover other nominal damages, must show the portion of his damages which is attributable to the particular industrial defendant. The industrial polluters are not jointly liable unless they are acting in concert. This would seem to place an undue hardship on the injured riparian. Some legislation has been passed to curb pollution, but other legislation is needed to solve the problem of recovering damages when multiple polluters are involved.

11. POLLUTION

(a) Rights as to Purity of Water

- (1) Lewis v. Stein, 16 Ala. 214 (1849)
- (2) Alabama Consol. Coal and Iron Co. v. Turner,
145 Ala. 639, 39 So.603 (1905)
- (3) Atlanta & B. Air Line Ry. v. Wood,
160 Ala. 657, 49 So.426 (1909)

GENERAL LAW:

"Every riparian proprietor has an equal right to have the stream flow through his land in its natural state without diminution in quality; and the making the same noxious, so as to deprive a proprietor of the use thereof, is a nuisance." Supra., 145 Ala. 639, 39 So.603 (1905).

(b) Nature and Extent of Pollution

- (1) Parsons v. T.C.I. Ry. Co., 186 Ala. 84, 64 So.591 (1914)
- (2) Jones v. T.C.I. Ry. Co., 202 Ala. 381, 80 So.463 (1918)

GENERAL LAW:

"A riparian proprietor has the right to extraordinary or artificial use of the stream flowing through his land and its waters, provided such water is restored without unreasonable diminution before leaving his land, and is not so polluted as to injuriously or materially affect its use by a lower proprietor." Supra., 202 Ala. 381, 80 So.463 (1918).

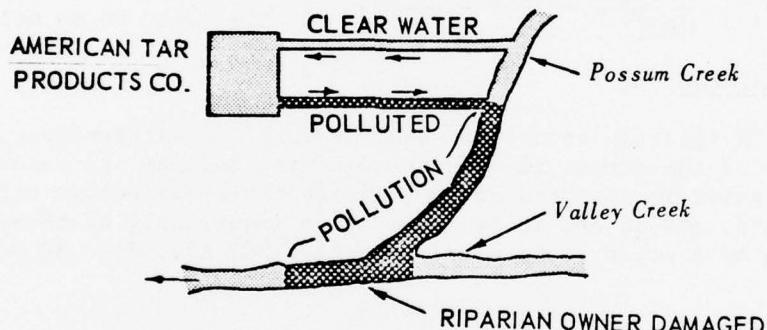
(c) Mines and Mining Operations

- (1) T.C.I. Ry. Co. v. Hamilton, 100 Ala. 252, 14 So.167 (1893)
- (2) Alabama Consol. Coal & Iron Co. v. Vines,
151 Ala. 398, 44 So. 377 (1907)
- (3) Corona Coal Co. v. Hoober, 204 Ala. 221, 85 So.477 (1920)
- (4) Yolande Coal & Coke Co. v. Pierce, 12 Ala. App.431,
68 So.563 (1915)

YOLANDE COAL & COKE CO. v. PIERCE
12 Ala. App. 431, 68 So.563 (1915)
(General proposition of law established by this case)

It is a matter of common knowledge that pure and wholesome water for domestic uses, and in farming operations, is a valuable asset, and its presence or absence materially affects the value of residence and farm properties, and it is settled law in this State that such rights cannot be destroyed by a superior riparian proprietor by the pollution of the water in a stream to such extent as to render the water in the stream unfit for domestic use, and to so pollute a stream by mining operations that the waters are impure and unfit for domestic use, and from which noxious gases and disagreeable odors arise rendering property used as a residence less comfortable. This gives a right of action for damages, and is true regardless of the methods of operation; negligence in such cases not to be a necessary predicate to the cause of action.

AMERICAN TAR PRODUCTS CO., v. JONES
17 Ala. App. 481, 86 So.113 (1920)



The test of liability is: Whether the water was so polluted as to unreasonably, injuriously, unjustly, or materially affect its ordinary and extraordinary use by the lower proprietor; and if it is so polluted as to unreasonably, injuriously, or materially affect its ordinary and extraordinary use by the lower proprietor, the party polluting the stream is liable to the lower owner so affected.

IMPORTANT: American Tar was not a riparian owner.

FACTS: Woodward Iron Co. was the riparian owner who was supplying American Tar with water from Possum Creek. If American Tar is not a riparian owner then naturally it is not entitled to riparian rights. American Tar is liable for the pollution it caused.

T.C.I. RY. CO. v. HAMILTON
100 Ala. 252, 14 So.167 (1893)
(General proposition of law established by this Case)

"While an upper riparian owner may use the waters of a stream for mining purposes, and, to a certain extent, impair its purity, he may not so pollute it as to render it unfit for the domestic use of a lower riparian owner, or so use it as to fill up the channel, and cause the debris to be deposited on his land."

(d) Mills and Factories

- (1) Lewis v. Stein, 16 Ala. 214 (1849)
- (2) American Tar Prods. v. Jones, 17 Ala. App.481,
86 So.113 (1920)

GENERAL LAW:

"The test of liability for damage to land from pollution of a stream by a manufacturer is whether the water was so polluted as to unreasonably, injuriously, unjustly, or materially affect its ordinary and extraordinary use by the lower proprietors, and the test is not whether the manufacturers had an up-to-date plant." Supra., 17 Ala. App. 481, 86 So.113 (1920).

ALABAMA CONSOL. COAL & IRON CO. v. TURNER
145 Ala. 639, 39 So.603 (1906)
(General proposition of law established by this Case)

A complaint, the several counts of which, allege a diversion of large quantities of water from the stream thereby preventing the accustomed flow; and the construction on said stream of a dam, which collects debris and discharges it upon plaintiff below, to the injury of his dam; and the operation by defendant of ore washers, which pollute said stream and cause mud, debris and other accumulations to come down on plaintiff to the damage of his dam and the pollution of the water, states a good cause of action, but the exclusive use of the waters in a stream by a riparian owner in substantially the same manner for more than ten years, with the knowledge of the lower riparian owner, and without interruption from him, raises a presumption of title as against a right in any other person, which might have been, but was not asserted.

MONTGOMERY LIMESTONE CO. v. BEARDEN
256 Ala. 269, 54 So.571 (1951)
(General proposition of law established by this Case)

In proceedings to restrain pollution of stream the exigencies of great industrial interest must be kept standing in view and property of large and useful interests should not be hampered for trifling causes, slight inconveniences or even some degree of interference with agriculture, and owners of land or streams must yield, within limits, to those interests.

12. ARTIFICIAL PONDS, RESERVOIRS, DAMS, AND FLOWAGE

Easement permitting water backed up by dam on grantees' land to overflow upon grantor's land was deemed to carry with it the right to fish and use the shore to enjoy full use of water and fishing privileges, where grantor had allowed such fishing activities or privileges for 31 years before attempting to bar grantees and their successors from access to portion of the lake lying on grantor's land.
Hill v. Davis, 272 Ala. 166, 130 So.2d 39 (1961).

Where one is granted by instrument in writing based on sufficient consideration a right to overflow or back water upon the land of another, an easement to flood is thereby created; the holder of the easement has the dominant estate and the owner of the land possesses the servient estate. Brown v. Alabama Power Co., 275 Ala. 467, 156 So. 2d 153 (1963).

CENTRAL OF GEORGIA RY. CO. v. CHAMPION
160 Ala. 517, 49 So.415 (1909)
(General proposition of law established by this Case)

While railroad companies may build their roads across streams, they must exercise due care not to obstruct the natural flow by embankments to the detriment of landowners in penning up waters and causing them to overflow lands. If an embankment erected across a water course obstructs the natural flow of the water and causes it to flood and back up and accumulate on the lands of another proprietor causing a continuous and constantly recurring injury, it presents a case authorizing the abatement of it, as a nuisance.

13. SURFACE WATERS

A flow of water in a ditch caused only by rainfall, is a character of flow that does not arise to the dignity of a defined, distinct stream, to which the law attaches rights and rules not applicable to waters caused by rainfall. Burson v. Saliba, 270 Ala. 212, 116 So.2d 609 (1960).

The lower proprietor in an incorporated town or city can build a wall or other obstruction on his property extending to the line between it and higher property and thereby prevent water from passing from the higher property over his property, even though that is the only way in which the surface water can pass, and the reason therefore is merely that the area is an incorporated town or city. Burson v. Saliba, supra.

Lots outside corporate limits of municipality are governed by civil law rule, as to flowage of surface water, that the lower surface is doomed to bear servitude to the superior and must receive water that falls on and flows from higher land, even though such lots are within developed subdivision. Dekle v. Vann, 279 Ala. 153, 182 So.2d 885 (1966).

14. SUBTERRANEAN AND PERCOLATING WATERS

Rights to wells, springs, and percolating waters.

Landowner has a right to reasonable and beneficial use of waters upon land or its percolations for agriculture, manufacturing, irrigation, or development of land for mining, although underground waters of neighboring properties may be thus interfered with or diverted. Sloss-Sheffield Steel & Iron Co. v. Wilkes, 231 Ala. 511, 165 So.764 (1936).

A lower proprietor of urban lots owes no duty to an upper proprietor to afford drainage for unchannelled subsurface waters, nor to refrain from improving his lots, and thereby prevent the natural flowage from upper lots onto the lower. Shahan v. Brown, 179 Ala. 425, 60 So.891 (1913).

A landowner may not place anything in percolating waters or in surface water in definite channels which will pollute the springs of his neighbors. Killian v. Killian, 175 Ala. 224, 57 So.825 (1912).

Although landowner may pump or draw or drain underground waters without liability to neighboring landowners when proper for natural and legitimate use of his own land, he may not in any unreasonable manner force and increase the flow to divert water from neighboring lands to some use disconnected with improvements and enjoyment of his own property. Sloss-Sheffield Case, supra.

ROGERS, TITLE TO SUBAQUEOUS LANDS IN ALABAMA,
11 Ala. L. Rev. 288 (1959)

In fresh water rivers navigable in fact, the State holds title to the low-water mark. The State has no interest in the beds of non-navigable streams; instead riparian landowners hold to the middle of the stream, as was the rule at common law.

Authority is sparse with regard to the ownership of lake beds, but there seems no reason to doubt that Alabama will follow the majority rule - namely, that title to the beds of navigable lakes is in the State, while title to beds of non-navigable lakes is in adjoining landowners.

Ample authority exists for the rule that the test for "navigability" is navigability in fact; the decisions of the court display consistency in the application of specific tests devised over the years.

Though authority is by no means abundant, it appears that there is little doubt, if any, as to the right of the State to grant and lease the water bottoms to which it holds title, subject to the paramount public right of navigation. A specific grant is apparently the only means by which title to such lands can be obtained by an individual.

In general, the law in Alabama as to water-bottom ownership appears well settled. There are only a few areas in which the authorities are so few as to raise doubts. In these instances, however, the few existing authorities have defined rules which if followed, can only be beneficial to the State and its citizens. It is submitted that the tremendous potential value of the subaqueous lands within this jurisdiction should be retained by the State wherever possible. The possibility of harm to individuals is slight, while the possibilities of great benefit to the public as a whole are many.

PART FOUR

ALABAMA SUPREME COURT CASES PERTAINING
TO THE USE OR CONTROL OF
WATER AND WATERWAYS

NAVIGABILITY

Preceding Page BLANK - ^{NOT} FILMED

NAVIGABILITY

If the body of water itself is navigable, as is Mobile Bay, fringe or shallow portions of that Bay incapable of supporting commercial navigation, will still be considered, as a matter of law, navigable waters. This means that all lands under this one body of navigable water belong to the State. United States v. Turner, 175 F. 2d 644 (1949).

A stream is *prima facie* not a navigable stream if it is above tide-water. Rollan v. Posey, 271 Ala. 640, 126 So.2d 464 (1961). On the other hand, all tidal streams are *prima facie*, public and navigable. Sayre v. Dickerson, 278 Ala. 477, 179 So.2d 57 (1965).

The control of fresh-water streams resides in the State in its sovereign capacity as representative of the people generally, and to be administered for their common benefit. As for the Federal Government's jurisdiction over non-navigable streams within a State, where the riparian rights are not owned by the Government itself, the only authority or jurisdiction of Congress flows from the commerce power to protect navigation of other streams, and beyond this Federal control over non-navigable streams is the same as, but no greater than, control over state highways on land not useable in interstate transportation. United States v. Appalachian Elec. Power Co., 107 F.2d 769 (1915). With this exception, the State has no control over non-navigable watercourses.

1. TEST OF NAVIGABILITY

The criterion for determining whether waters are navigable in such fashion as to vest title in the State to soil beneath them is whether the waters be navigable in fact. United States v. Property on Pinto Island, 74 F. Supp. 92 (1947).

In determining the navigability of a freshwater stream, navigable for only a part of the year, not less than all of the following considerations should be considered: Whether the stream is suitable for valuable flotage for a sufficient length of time for its beneficial use by the public; whether the public or only a few individuals are interested in transportation on it, or any great public interests are promoted in its use for transportation; whether it has been previously used generally, and how long it has been and will be used, by the public; and whether it was meandered by government surveys, or included therein. Blackman v. Mauldin, 164 Ala. 337, 51 So.2d (1909).

2. EBB AND FLOW OF TIDE

The capacity of use by the public for purposes of transportation and commerce is the true criterion of the navigability of a river, rather

than the extent and manner of its use. Alabama Power Co. v. Gulf Power Co., 283 F. 606 (1922).

All tidal streams are, *prima facie*, public and navigable. Sayre v. Dickerson, 278 Ala. 447, 179 So.2d 57 (1965).

3. SPECIFIC WATERS

The fact that waters flowing over submerged lands of island located in body of water in Alabama that was concededly navigable waters were too shallow for actual navigation, did not preclude waters flowing the island from being navigable waters. United States v. Turner, 175 F. 2d 644 (1949).

Mobile River is a "navigable river", and its bed is owned by the State. Chamberlain v. Board of Commissioners of City of Mobile, 243 Ala. 662, 11 So.2d 724 (1943).

4. CONSTITUTIONAL AND STATUTORY PROVISIONS

Federal Water Power Act (16 U.S.C.A. § 791 et seq.), creating the Federal Power Commission, with authority to regulate dams and reservoirs on navigable streams and to grant to licensees authority to construct dams on navigable streams, with the right to the surplus water at the weir not necessary for navigation as compensation for outlay in construction of dam - Held - not unconstitutional, as against the contention that it trespasses on the power of the State to control and regulate or use their navigable waters, since the rights of the State in such waters are subordinate to the Federal Government's right to promote navigation; the principal purpose of the statute being the promotion of navigation and note Sections 799-821, providing that nothing contained in the Act should be construed to effect or interfere with the laws of the respective states "relating to the control, appropriation, use or distribution of water used in irrigation or for municipal or other uses, or any vested right acquired therein." - Alabama Power Co. v. Gulf Power Co., 283 F. 606 (1922).

5. OWNERSHIP OF WATERS

Navigable waters and soil beneath them in Alabama belong to the State. United States v. Turner, 175 F. 2d 644 (1949).

The State is the absolute owner of all navigable waters within its territorial limits. City of Mobile v. Eslava, 9 Port. 577 (1839).

AD-A041 399

CORPS OF ENGINEERS CINCINNATI OHIO
DEVELOPMENT OF WATER RESOURCES IN APPALACHIA. MAIN REPORT. PART--ETC(U)
JUN 70

F/G 8/6

UNCLASSIFIED

4 OF 7
ADI
A041399

NL



The State of Alabama was admitted into the Union on an equal footing with the original thirteen states, and it is therefore entitled to the same right of property in the tide waters within its limits as was vested in the original states by virtue of their charters. City of Mobile v. Eslava, 9 Port. 577 (1839).

6. NAVIGATION RIGHTS IN GENERAL

The navigable waters in Alabama extend not only to low water, but embrace all the soil that is within the limits of high water mark. City of Mobile v. Eslava, 9 Port. 577 (1839).

All members of the public have an equal right to the reasonable use of navigation or reasonable use of a navigable stream, which must not be incompatible with the reasonable free use by others. Alabama Power Co. v. Smith, 229 Ala. 105, 155 So. 601 (1934).

7. POSSESSION AND USE ACCORDED TO RIPARIAN OWNERS

By immemorial usage and custom in this State the doctrine is recognized that a riparian proprietor, whose land is bounded by a navigable stream, has a right of access to the navigable part thereof in front of his land, and to construct a wharf, pier, or piles projecting into the stream for his own use or the use of others. This right accorded to riparian owners is subject to the rights of navigation and rules of public control, and all state laws and regulations with respect to navigable waters and rights acquired thereunder are subject to the paramount right of the United States under its constitutional authority. McDonnell v. Murnon Shipbuilding Corporation, 210 Ala. 611, 98 So.887 (1924).

8. LEASES

A lease of water front and booming facilities in navigable water does not carry with it a lease of the bed of the stream, but only such privileges as are consistent with the public use. Sullivan v. Spotswood, 82 Ala. 163, 2 So.716 (1886).

Land lying under Mobile Bay, Alabama, is state-owned land and may be leased by the State subject to the superior right of navigation vested in the United States for the benefit of all the public. Gallion v. Argiro, 273 Ala. 44, 134 So.2d 209 (1961).

GALLION v. ARGIRO
273 Ala. 44, 134 So.2d 209 (1961)

FACTS: State of Alabama leased land under shallow water of Mobile Bay to Hudson Oil Company, for use in connection with the land they (Hudson Oil) had adjacent to the Bay. The lessee, Hudson Oil, proceeded to fill in this shallow water and in so doing blocked plaintiff's straight access to the Tensaw River.

ISSUE: Whether plaintiffs as riparian owners have a right to a bee-line access from their lands to the Tensaw River?

DECISION: Plaintiffs do not have a right to bee-line access from their land to the Tensaw River but only right of access to navigable water in front of his land.

REASONS: Plaintiffs/appellees have no right to a bee-line route of access from their property since their right of access as riparian owners is to the navigable waters of Mobile Bay in front of their up-lands which according to the evidence is not affected by appellants/defendants improvements.

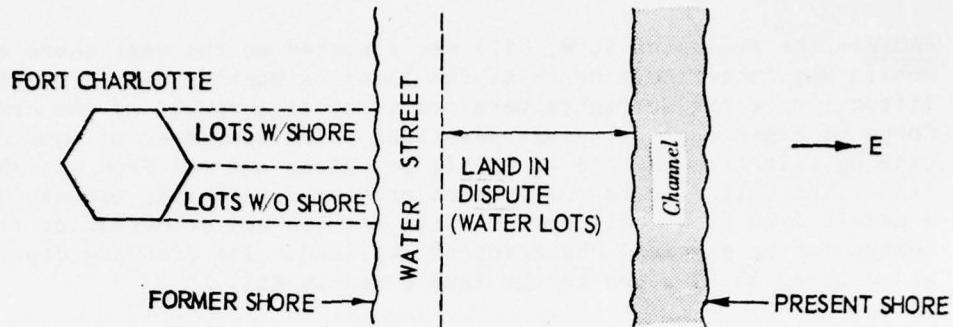
To allow plaintiffs/appellees the paramount right of access to navigable waters latterally from their land westwardly to the Tensaw River upon which plaintiffs/appellees are not riparian proprietors would do violence to the legal principles governing such situations and interfere with future development and improvement along the shore line of the Mobile Bay Bridge Causeway.

9. RECLAMATION AND IMPROVEMENT

Although riparian right of access as way of necessity to reach navigable portion of water, including right to fill in over the shore, existed in Alabama, that right could not ripen into title of submerged lands against the State and its grantee, and it did not exist where filling in was not done under any necessity to reach, or for purpose of reaching, deep water. United States v. Turner, 175 F.2d 644 (1949).

Title to the bed or bottom beneath navigable waters is in the State, but the State's title is to the bed as a bed and not to the individual grains of sand or lumps of mud that constitute the land making up the bed, and consequently there is not title inherent in a gallon of fluid mud, silt or clay that comes from the bottom and flows through pipes of a hydraulic dredge to its final resting place in new land that it makes. - State v. Gill, 259 Ala. 177 66 So.2d 141 (1953).

MAYOR OF MOBILE v. ESLAVA
9 Port. 577 (1839)



By statute these "water lots" went to the owners of lots on the adjoining shore unless they had relinquished those lots by expressed consent.

This land (water lots) was reclaimed by accretion and also by man's help. In this way, several streets have been added where the water lots were running North and South so that this is now a main commercial center.

Prior to Alabama's admission to the Union the U.S. Government granted to the City of Mobile the land in question (water lots). Upon Alabama's admission the sovereign state became the trustee of all navigable waters for the good of all the people - this term navigable waters takes in the land we are concerned with (water lots). If the body of water is navigable as is Mobile Bay, then all waters of that body, be they shallow or not, are by law considered navigable, and the land thereunder is held by the State. What belongs to the State, i.e., soil under navigable waters, the Federal government cannot, by grant or otherwise, invest in others.

By the Acts of Congress regulating the survey and disposal of the public lands, the Federal government has renounced the title to the navigable waters, and the soil covered by them; consequently, the Mayor cannot recover on the ground of a dedication to the uses of the City.

By Alabama's admission into the Union, without a reservation of the right of property in the navigable waters, the State succeeded to all the rights of the United States.

See in connection with Mayor of Mobile v. Eslava:

1. Mobile Transportation Co. v. Mobile, 128 Ala. 335, 30 So.645 (1900).
2. Mobile Dry Docks v. Mobile, 146 Ala. 207, 40 So.205 (1906).
3. State v. Alabama Power Co., 176 Ala. 626, 58 So.462 (1912).

STATE v. GILL
259 Ala. 177, 66 So. 2d 141 (1953)

FACTS: The realty of S. W. Gill was situated on the west shore of Mobile Bay immediately north of the Theodore Docks. Gill's original littoral or riparian rights were destroyed as a result of the Army Corps of Engineers' dredging operations which consisted of pumping and placing silt from the bed of Mobile Bay along and out from his shore line. The United States Government proceeded with this process without a permit from S. W. Gill nor did Gill receive any compensation for this change in the physical character of his land. The dredging deposits added about 55.91 acres to the land owned by Gill.

ISSUE: Whether the littoral owner or the State of Alabama was entitled to an artificial accretion to a land mass resulting from the Federal government's dredging operations?

DECISION: Title to said artificial accretions belongs to the littoral owner and not the State of Alabama.

REASONS: In the case of streamlined accretion, title to such made-land is conferred upon the upland owner, subject only to the paramount rights of the United States and State in aid of navigation.

Title to the bed or bottom beneath navigable waters is in the State, but this is a title to the bed as a bed and not to the individual grains of sand or lumps of mud that constitute the land making up the bed. Consequently there is no title inherent in a gallon of fluid mud, silt or clay that comes from the bottom and flows through the pipes of a dredge to its final resting place in the new land that it makes.

10. OWNERSHIP AND CONTROL OF LANDS UNDER WATER BY THE STATE

The State of Alabama, when admitted into the Union, became entitled to the soil below high-water mark under the navigable waters within the limits of the State. Mobile Transp. Co. v. City of Mobile, 187 U.S. 479 (1903).

The State owns bed and bottom of navigable streams in Alabama, not those which are non-navigable. Hood v. Murphy, 231 Ala. 408, 165 So.219 (1936).

Title to the bed or bottom beneath navigable waters is in the State, but the State's title is to the bed as a bed and not to the individual grains of sand or lumps of mud that constitute the land making up the bed, and consequently there is no title inherent in a gallon of fluid mud, silt or clay that comes from the bottom and flows through pipes of a hydraulic dredge to its final resting place in the new land that it makes. - State v. Gill, 259 Ala. 177, 66 So.2d 141 (1953).

Beds of rivers, bays, etc., within the State's jurisdiction, are the State's property in trust for the people, subject to a riparian owner's statutory rights. Title 8, Section 113, Code of Alabama, Howard v. State, 23 Ala. App. 228, 124 So.912 (1929); Lyons v. State, 23 Ala. App. 231, 124 So.915 (1929).

The term "coast line" in the decree that the United States is entitled to all lands, minerals and other natural resources underlying the Gulf of Mexico more than three geographical miles seaward from the coast lines of Louisiana, Mississippi and Alabama and more than three leagues seaward from the coast lines of Texas and Florida, and extending seaward to the edge of the continental shelf, means the line or ordinary low water along that portion of the coast which is in direct contact with the open sea and the line marking the seaward limit of inland waters. Submerged Lands Act, § 5, 43 U.S.C.A. § 1313. - United States v. States of Louisiana, Texas, Mississippi, Alabama, and Florida, 364 U.S. 502 (1960).

Land lying under Mobile Bay is State-owned land and may be leased by the State subject to the superior right of navigation vested in the United States for the benefit of all the public. State v. Argiro, 273 Ala. 33, 134 So.2d 209 (1961).

11. POWER TO GRANT

The State may grant the fee of its shores of tidal water to a municipality in furtherance of the public interest, subject to the rights of the United States respecting navigation. Mobile Transp. Co. v. City of Mobile, 128 Ala. 335, 30 So.645 (1900).

Though the title to the beds and waters of navigable streams is in the State, subject to the right of navigation lodged in the United States as trustee for all the people, the State may grant the fee by a conveyance not inconsistent with the public interest. State v. Alabama Power Co., 176 Ala. 618, 59 So.273 (1912).

Under Alabama law companies owning sites upon the Coosa River could, by filing plans for proposed developments, acquire without cost prior rights to develop the properties in accordance with the filed plans. Alabama Code (1907) §§ 3627 et seq. 6148-6150; cf. State of Alabama v. Alabama Power Co., 176 Ala. 618, 59 So.273 (1912).

12. SEAWARD BOUNDARY DEFINED

The Act of Admission of Alabama describing its boundary, in part, as "due South, to the Gulf of Mexico; thence, eastwardly, including all the islands within six leagues of the shore" did not grant to Alabama all waters and submerged lands within six leagues of the shore.

Under the Submerged Lands Act, Alabama was not entitled to rights in submerged lands lying beyond three geographical miles from its coast. Submerged Lands Act, §§ 1-11, 43 U.S.C.A. §§ 1301-1315.

13. TITLE TO LAND FORMED BY ACCRETION

Question as to whether State or littoral owner was entitled to artificial accretion to land mass resulting when the Federal Government deposited material dredged from Mobile Bay on the shore of said Bay would be determined by the Law of Alabama. Littoral owner rather than the State was entitled to the artificial accretion to the land mass - or shore - . State v. Gill, 259 Ala. 177, 66 So.2d 141 (1953).

In order to apply accretion apportionment doctrine there must be natural accretions present against the shoreline of two or more contiguous upland owners. State v. Argiro, 273 Ala. 44, 134 So.2d 209 (1961).

14. OBSTRUCTIONS TO NAVIGATION

A bridge spanning a navigable river is an obstruction to navigation tolerated because of necessity and convenience to commerce upon land, and such structure must be so maintained and operated that navigation may not be impeded more than is absolutely necessary; right of navigation being paramount. St. Louis-San Francisco Ry. Co. v. Motor Vessel D. Mark, 243 F. Supp. 689 (1965).

15. LEGAL TERMINOLOGY AND DEFINITIONS

- a. ACCRETION: The act of growing to a thing; usually applied to the gradual and imperceptible accumulation of land by natural causes, as out of the sea or a river.
- b. BANKS: That part of a stream which retains the water.
- c. CONTIGUOUS UPLAND OWNERS: In close proximity; near, though not in contact; neighboring.
- d. DEDICATION: An appropriation of land to some public use, made by the owner, and accepted for such use by or on behalf of the public.
- e. EASEMENT: A right in the owner of one parcel of land, by reason of such ownership, to use the land of another for a special purpose not inconsistent with a general property in the owner.
- f. EJECTMENT: At common law, an action which lay for the recovery of the possession of land, and for damages for the unlawful detention of its possession.
- g. EMINENT DOMAIN: The power to take private property for public use.
- h. FEE: Applied to an estate in land and is all the property in the estate which a person may have; an estate without conditions.
- i. FLAT: A place covered with water too shallow for navigation with vessels ordinarily used for commercial purposes. The space between high and low water mark along the edge of an arm of the sea, bay, tidal river, etc.
- k. GRANT: To bestow; to confer, upon someone other than the person or entity which makes the grant.

1. HIGH-WATER MARK: This term is properly applicable to tidal waters, and designates the line on the shore reached by the water at the high or flood tide.
- m. IMMEMORIAL USAGE: Beyond human memory; a practice which has existed time out of mind; custom; prescription.
- n. LEASE: Any agreement which gives rise to relationship of landlord and tenant. Any grant of permissive use.
- o. LITTORAL: Belonging to the shore, as of seas and great lakes. Corresponding to riparian proprietors on a stream or small pond.
- p. LOW-WATER MARK: That line on the shore of the sea which marks the edge of the waters at the lowest point of the ordinary ebb tide. The low-water mark of a river is the point to which the water recedes at its lowest stage.
- q. NAVIGABLE: Capable of being navigated; that may be navigated or passed over in ships or vessels.
- r. NAVIGABLE IN FACT: Streams or lakes are navigable in fact when they are used or are susceptible of being used in their natural and ordinary condition as highways for commerce over which trade and travel are or may be conducted in the customary modes.
- s. NAVIGABLE RIVER OR STREAM: A river or stream in which the tide ebbs and flows, or as far as the tide ebbs and flows.
- t. NAVIGABLE WATERS: Those waters which afford a channel for useful commerce. Waters are navigable when they are used, or are susceptible of being used, in their ordinary condition, as highways for commerce, over which trade and travel are or may be conducted.

u. PURPRESTURES:	An inclosure by a private party of a part of that which belongs to and ought to be open and free to the enjoyment of the public at large.
v. RECLAMATION:	To reduce marshy or swamp land to a state fit for use.
w. RELICTION:	An increase of the land by the permanent withdrawal or retrocession of the sea or a river.
x. RIPARIAN:	Belonging or relating to the bank of a river or stream.
y. RIPARIAN OWNER:	A riparian proprietor; one who owns land on the bank of a river or stream.
z. RIPARIAN PROPRIETOR:	An owner of land, bounded generally upon a stream of water, and as such having a qualified property in the soil to the thread of the stream (middle) with the privileges annexed thereto by law.
a(1). RIPARIAN RIGHTS:	(1) Use of water for general purposes; (2) to wharf out to navigability; and (3) access to navigable waters.
b(2). SERVIENT:	Serving; subject to a service or servitude.
c(3). SHORE:	Land on the margin of the sea, a lake, or a river, - especially a large river, in which the water ebbs and flows.
d(4). TIDAL:	In order that a river may be "tidal" at a given spot, it may not be necessary that the water should be salty, but the spot must be one where the tide, in the ordinary and regular course of things, flows and reflows.
e(5). TIDE-WATER:	Water which falls and rises with the ebb and flow of the tide. The term is not usually applied to the open sea, but to coves, bays, rivers, etc.

f(6). VESTED RIGHT:

Immediate or fixed right to present or future enjoyment and one that does not depend on an event that is uncertain. This right cannot be divested without the consent of the person to whom it belongs.

g(7). WAY OF NECESSITY:

A way such as is required for complete and beneficial use of land to which the way is impliedly attached.

TWO DOCTRINES FOR THE DIVISION OF
LAND FORMED BY ACCRETION

Where accretions form along the bank or shore in front of the premises of several adjoining proprietors, the new land is to be divided among them in proportion to their relative frontage, on the original bank or shore, or, according to another rule, by extending their side lines forward at right angles with the middle thread of the stream.

PART FIVE

ALABAMA ATTORNEY GENERAL OPINIONS
RELATING TO WATER

Preceding Page BLANK - NOT FILMED

ATTORNEY GENERAL'S OPINIONS
CONCERNING WATER

1. QUARTERLY REPORT, 1936, Volume 3, page 69.

STATE LEGISLATURE HAS POWER TO LEGISLATE ON PUBLIC BODIES OF WATER
SUBJECT TO PARAMOUNT RIGHTS

A. Problem:

Citizen of Clarke County, Alabama, owned a substantial portion of a body of water in said County known as Horse Shoe Lake. He owned all the land bordering on the lake on the inside of the horse shoe (the lake was in the form of a horse shoe). The outside curve of the lake was owned by other parties. He and his family had owned this land for fifty years.

The legislature declared this body of water "public" and the complaining party contends his property, if this Act is valid, deprives him of his property without compensation and therefore is unconstitutional.

B. Opinion by Assistant Attorney General Knabe:

"Subject to the paramount authority of Congress over commerce and the navigable waters of the United States, and to private property rights, the State has full authority to legislate concerning the use of navigable streams which are within the territorial limits of the State, without regard to whether or not they connect with waters outside such limits." (45 C.J. at page 421.)

I am of the opinion that the Legislature of Alabama has authority to pass Acts relating to the public waters of the State and in the present instance, the application of such a law would depend upon the facts.

2. QUARTERLY REPORT, 1939, Volume 14, page 41.

OYSTERS - RIPARIAN RIGHTS

A. Problem:

Can an upland owner fronting on the water, with riparian rights, lease, or authorize other parties to gather oysters fronting on his property for a distance of 600 yards, or in any way assign his rights?

B. Opinion by Assistant Attorney General Rowe:

"Yes." The 1923 Code of Alabama provides in part:

"All the beds and bottoms of the rivers, bayous, lagoons, lakes, bays, sounds and inlets within the jurisdiction of the State of Alabama are the property of the State, to be held in trust for the people thereof, but the owners of land fronting on such waters, where oysters may be grown, shall have the right to plant and gather the same in the waters in front of their land, to the distance of six-hundred yards from the shore."

3. QUARTERLY REPORT, 1947, Volume 49, page 68.

WATER AND WATERWAYS

A. Problem:

A party entered a river at one point, drifted down the river, then out in the back water and fished over lands belonging to another party and evidence showed that the party in question was between one-half and three-fourths of a mile from the normal stage of the river water. Is such a fisherman trespassing?

B. Opinion by Assistant Attorney General Hardin:

If such water does constitute part of the natural watercourse, the fisherman is guilty of no offense against the landowner. If, however, such water does not constitute part of a natural watercourse but is mere surface water, not a part of the stream, which is located solely upon the lands of another, such fisherman would be guilty of an offense under Title 8, Section 69, Code of Alabama 1940.

PART SIX

ALABAMA AGENCIES CONCERNED WITH
WATER RESOURCES

Preceding Page BLANK - NOT FILMED

List of Agencies

1. Department of Agriculture and Industries
2. Department of Conservation
3. Geological Survey of Alabama
4. State Oil and Gas Board
5. Department of Public Health
6. Water Improvement Commission
7. State Highway Department
8. Alabama State Docks Department
9. State Planning and Industrial Development Board
10. State Soil and Water Conservation Committee
11. Tennessee-Mulberry Waterway Commission
12. Tennessee-Tombigbee Water Development Authority
13. Water Resources Research Institute
14. Warrior-Tombigbee Development Association
15. Coosa-Alabama River Improvement Association
16. Bear Creek Development Authority
17. Alabama Plan for Emergency Management of Water Resources

NOT
Preceding Page BLANK - FILMED

AGENCIES RESPONSIBLE FOR ALABAMA'S
WATER RESOURCES

There are several agencies which have legal interests in or are directly concerned with some phase of water and/or related land management.

1. DEPARTMENT OF AGRICULTURE AND INDUSTRIES

Creation and Authority.

The office of Commissioner of Agriculture and Industries was created by statute in 1883 and was placed in the Alabama Constitution of 1901. The present Department of Agriculture and Industries was created in 1923. Thus the Commissioner is a constitutional officer, but the Department and Board are statutory. See: Alabama Constitution of 1901, Secs. 114, 116 and 173; Code of Alabama (1940) (Recomp. 1958), Title 2, Secs. 1-690 and Title 3, Secs. 55(4)-55(8); Act No. 794, 1965 General Acts of Alabama. (See Parts One and Two of this Book.)

Statutes relating to soil and water conservation districts [Title 2, Section 659(1), Code of Alabama (1940) (Recomp. 1958)], watershed conservancy districts [Title 2, Sections 670(1)-670(17), Code of Alabama (1940) (Recomp. 1958)], and the Alabama Water Management Act [Title 2, Sections 273(2), 273(3), 273(11), 273(14)-273(17), 273(36), 273(42), 273(46)-273(47), Code of Alabama (1940) (Recomp. 1958)] appear in Part Two of this Book. These districts and the Water Management Act denote the department's activities in water related activities.

2. DEPARTMENT OF CONSERVATION

Creation and Authority.

This department was established in 1939. See: Code of Alabama (1940) (Recomp. 1958), Title 8, Secs. 1-262; Title 26, Secs. 179(56i)-(58r), and Title 38, Sec. 97(4); Acts No. 575, 661, 689, 719, 787, 828, 1965 General Acts of Alabama. It superseded the Conservation Board; Department of Conservation of Game, Fish, and Seafoods; Alabama Oyster Commission; State Commission of Forestry; State Forester; and Alabama Monument Commission.

In general, this Department is concerned with the duty of protecting, conserving, and increasing the State's wildlife and seafood and its forest products. It makes reports on these subjects. It is also authorized to protect unused State land which includes swamp and overflowed lands; and the department operates state parks and state forests.

In the area of water and water related resources and activities, the Department has control over state lands which are not under the control of other State agencies or departments. This would include lands under navigable bodies of water.

The Department has full jurisdiction and control over all sea-foods existing or living in the waters of Alabama. Code of Alabama (1940) (Recomp. 1958), Title 8, Section 4.

For the Department's authority over swamp and overflowed lands see Title 8, Sections 246-252(4), Code of Alabama (1940) (Recomp. 1958). (See Part Two of this Book.)

In the Department there is a Director of Irrigation. For his functions and duties see Title 8, Section 9(1), Code of Alabama (1940) (Recomp. 1958). (See Part Two of this Book.)

3. GEOLOGICAL SURVEY OF ALABAMA

Creation and Authority.

The Office of State Geologist and the Geological Survey were created in 1848. See: Code of Alabama (1940) (Recomp. 1958), Title 55, Sections 245-254(10); Act No. 661, 1965 General Acts of Alabama.

Purpose.

The Geological Survey promotes an interest in the State's mineral, oil and gas, and water resources by determining the extent and quality of these resources for economic use.

State Geologist.

The State Geologist is appointed by the President of the University of Alabama with the consent of the Governor. He must be the most competent Geologist available. His term of office and compensation are fixed by the appointing powers.

Duties. It is the duty of the State Geologist to administer his office and the Geological Survey in making mineral, oil and gas, and water resources studies in the State. The State Geologist cooperates with the U.S. Geological Survey in making topographic maps, mineral deposit studies, geologic maps, and water resources investigations. He also cooperates with the U.S. Bureau of Mines and certain other Federal agencies in making mineral exploration and evaluation studies.

The State Geologist also acts as State Oil and Gas Supervisor and must make reports to the Legislature at each regular session. He prepares material collected during mineral, oil and gas, and water resources studies for subsequent publication as a report to the Governor on these findings. In addition, he may teach at the University of Alabama and may employ faculty members and students of any institution of higher learning in the State of Alabama to do research and other related work for the State Geological Survey or the State Oil and Gas Board.

Organization of the Office of State Geologist. The State Geological Survey and State Oil and Gas Board are both responsible to the State Geologist. The units of these parallel agencies are listed below. In addition to the personnel of these units, the State Geologist also may employ consultants in geology and related fields as deemed appropriate for the best interests of the Survey and State Oil and Gas Board. The State Geologist's Office and Geological Survey Staff are housed in the State Oil and Gas Building at the University of Alabama. The working units of these parallel agencies are as follows:

Assistant State Geologist. The Assistant State Geologist is appointed by the State Geologist and acts as programs and plans officer for the formulation, development, and coordination of projects being conducted for mineral, oil and gas, and water resources in the State. He also is responsible for public information relative to the activities of the Geological Survey and State Oil and Gas Board. In addition he may teach at the University of Alabama.

Administrative Division. This Division performs services for the other units and includes accounting, library, maintenance, duplication, and publication.

Legal Office. This office is also a service unit in that it provides legal advice and legal services for the State Geologist and the other working units under his supervision.

Economic Geology Division. The principal function of this Division is to locate, map, and evaluate mineral deposits. It also determines efficient methods of producing and processing these materials for industrial uses. In carrying out its functions this Division cooperates with the U.S. Geological Survey, U.S. Bureau of Mines, and related Federal agencies.

Oil and Gas Division. This Division collects and disseminates data on exploration, drilling, and production of oil and gas. It also conducts research in exploration methods and techniques.

Paleontology-Stratigraphy Division. The staff stimulates, supports and performs basic and applied research pertaining to

(1) the distribution and relationships of surface and subsurface layered rocks, (2) the fossils occurring in the various formations. The data obtained through these studies are published in the form of reports and maps. In support of these activities, reference collections of fossils, well cutting samples and cores are maintained.

Geophysics Division. Exploration for water, minerals and petroleum with geophysical methods is the primary responsibility of this Division. The geophysical program includes studies of the sub-surface strata and structure based on electric and other logs from water and oil test wells and extensive gravity, magnetic, seismic and electrical resistivity surveys. Results of investigations and interpretations are published in the form of reports and maps. Geologist and geophysicists are required to perform regular duties and do research for new techniques and instrumentation.

Water Resources Division. This Division prepares reports on the State's water resources. It provides technical data on the occurrence, movement, and quality of surface and ground-water resources. The Division cooperates with the U.S. Geological Survey in water resources matters.

4. STATE OIL AND GAS BOARD

Creation and Authority.

The Board was established in its present form in 1945. See: Code of Alabama (1940) (Recomp. 1958), Title 26, Secs. 179(24)-179(56h); Acts No. 79, 80, 81 and 82, 1965 Second Special Session, Acts of Alabama.

Purpose.

The State Oil and Gas Board promotes the conservation of crude oil and gas resources in the State.

Composition

The Board is composed of three members appointed by the Governor, one of whom is elected to serve as the Chairman. Members must be residents of Alabama and qualified voters. They serve six-year staggered terms. The Board determines its own date, time, and place of meeting. Two members constitute a quorum, the affirmative vote of both being necessary for action.

Duties.

The Board promulgates rules and regulations to bring about

conservation of oil and gas resources. It may require the casing, plugging, and treatment of wells to prevent escape of oil or gas, pollution of fresh water, and waste of oil and/or natural gas. The Board regulates the drilling for production of crude oil or natural gas to prevent damage to neighboring property. It may limit or prorate production when necessary, require drillers and operators to submit reports, and authorize the operation of only those wells with efficient gas and oil ratios. The Board may regulate the spacing of wells, establish drilling units, establish unit operations of a pool in order to increase recovery through secondary methods, and take control of wells when necessary to prevent wanton waste. It may take other action necessary to conserve oil and gas resources, and may bring suits, through the Attorney General, when its conservation rules and regulations are violated.

State Oil and Gas Supervisor.

The State Geologist is the State Oil and Gas Supervisor ex officio. The Supervisor serves as Secretary to the Board and keeps a record of all its proceedings. He enforces all laws relating to oil and gas and enforces all rules, regulations, and orders of the Board.

5. DEPARTMENT OF PUBLIC HEALTH

Functions of this Department that pertain to water and water supplies are set forth in Part Two of this Book. See: Code of Alabama (1940) (Recomp. 1958), Title 22, Secs. 117, 133, 134 and 135.

6. WATER IMPROVEMENT COMMISSION

The functions and duties of this Commission are set out verbatim in Part Two of this Book. See: Code of Alabama (1940) (Recomp. 1958), Title 22, Secs. 140(6)-140(12).

7. STATE HIGHWAY DEPARTMENT

Creation and Authority.

The Department was established in its present form in 1939. See: Alabama Constitution of 1901, Amendment 142; Code of Alabama (1940) (Recomp. 1958), Title 23, Secs. 1-78; Act No. 150, 1965 General Acts of Alabama; and Act No. 180, 1965 First Special Sessions, Acts of Alabama.

General Duties of Highway Department.

"The Highway Department shall cause to be made and kept in its

office a general highway map of the State which shall show all State roads. It shall collect information and prepare statistics relative to the mileage, character and condition of the roads and bridges in all counties of the State. It shall investigate and determine the methods of road construction best adapted to the various sections of the State and shall establish standards for the maintenance of roads and bridges which have been constructed with State aid. It may at all reasonable times be consulted by county and municipal officials relative to any matter relating to the construction of roads and bridges or culverts and the Department may also call on all county and municipal officials for any information or assistance it may require and it shall be their duty to supply the same. The Highway Department shall determine the character and have the general supervision over the construction and maintenance of all public roads, bridges, and culverts in the State where the funds of the State are used, and shall have a general supervision over the expenditure of any funds apportioned to any county of the State for the construction and maintenance of all public roads, bridges and culverts in each county." (Title 23, 1940 Code of Alabama - Section 13.)

8. ALABAMA STATE DOCKS DEPARTMENT

The creation and authority as well as the purpose of this Department appear under Title 38, Sections 1-45(50), Code of Alabama (1940) (Recomp. 1958). (See Part Two of this Book.)

9. STATE PLANNING AND INDUSTRIAL DEVELOPMENT BOARD

Creation and Authority.

The Board was established in its present form in 1955. (See: Code of Alabama (1940) (Recomp. 1958), Title 37, Sec. 816 and Title 55, Secs. 373(1)-373(6e); Acts No. 661, 662 and 746, 1965 General Acts of Alabama. It was originally established in 1935 as the State Planning Commission, but was reorganized in 1939. In 1943 it was renamed the State Planning Board. The present Board has all the powers, authority, property, duties and functions of the Agency created in 1943.

Purpose.

The State Planning and Industrial Development Board administers a comprehensive planning program. This program includes the preparation of a State master plan and the furnishing of aid to local governments for planning and industrial development. This may include among other things, the general locale, character, and extent of highways, bridges, waterways, water front developments, flood prevention works, forest reservations, wildlife refuges, works for the prevention of stream pollution, railroad and motor vehicle routes, etc.

Duties.

Planning. The Board prepares a master plan and provides an assistance program to counties and municipalities in the preparation of comprehensive physical plans. It investigates and ascertains the industrial possibilities of Alabama and seeks their development, collects statistics in regard to industrial development, and cooperates with other planning agencies authorized by law.

Composition of the Board. The Board is composed of select citizens who are outstanding in the fields of manufacture and processing, business and commercial enterprises, engineering and industrial development, natural resources, electric and gas utilities, industrial real estate and industrial property management, banking and finance, labor relations, and mass communications. These members are appointed by the Governor, one for each congressional district in the State. In addition to these members, the Governor serves as Chairman of the Board along with the Commissioner of Agriculture and Industries, the Commissioner of Revenue, State Highway Director, and the Director of the State Docks.

10. STATE SOIL AND WATER CONSERVATION COMMITTEE

The duties and functions of this Committee appear in full under Part Two of this Book. See: Title 2, Chapter 6, Section 659(1) of the Code of Alabama (1940) (Recomp. 1958.)

11. TENNESSEE-MULBERRY WATERWAY COMMISSION

In Part Two, under Title 38, Sections 127-128, appears the establishing clause of this Commission as well as its purposes and duties.

12. TENNESSEE-TOMBIGBEE WATERWAY DEVELOPMENT AUTHORITY

In Part Two, under Title 38, Sections 123, 125, and 126 of the Code of Alabama (1940) (Recomp. 1958), the Development Compact appears and sets out the purpose and duties of this Development Authority.

13. WATER RESOURCES RESEARCH INSTITUTE

In Part Two, under Title 8, Sections 266-269 of the Code of Alabama (1940) (Recomp. 1958), the policy and duties of this Institute are set out.

14. WARRIOR-TOMBIGBEE DEVELOPMENT ASSOCIATION

Nature and Purpose of the Association.

This Association is organized not for profit but for educational and benevolent purposes, including the continued improvement of the Warrior-Tombigbee Waterway System, including Mobile Harbor, development of navigation, flood control, water conservation and allied interests.

15. COOSA-ALABAMA RIVER IMPROVEMENT ASSOCIATION

Creation and Authority.

The Coosa-Alabama River Improvement Association, Inc., is a corporation authorized by the Laws of the State of Alabama, and is expressly provided for by Code of Alabama (1940) (Recomp. 1958), Title 10, Section 21(24)-21(31), Article 3.

This Association is organized, not for profit, but for educational and benevolent purposes, including the continued improvement of the Alabama-Coosa-Mobile Waterway System, and including Mobile Harbor, development of navigation, flood control, water conservation and allied interests. The Association shall be exempt from taxation, and none of its income, property or other assets shall ever inure to any individual.

The Coosa-Alabama River Improvement Association has over the years received valuable assistance from State and Federal agencies, officials of county and city governmental bodies, civic organizations and others in the effort to expedite the comprehensive development of the Alabama-Coosa River System and the improvement of Mobile Harbor.

16. BEAR CREEK DEVELOPMENT AUTHORITY

Authority.

Code of Alabama (1940) (Recomp. 1958), Title 55, Sections 373(6x)-373(6pp). Act No. 584, 1965 General Acts of Alabama, p. 1080, apprvd. August 26, 1965. See also Amendment 247 to the 1901 Constitution of Alabama concerning the development of the Bear Creek Watershed Area as set out in Part One of this Report.

17. STATE OF ALABAMA PLAN FOR EMERGENCY MANAGEMENT OF WATER RESOURCES

Purpose.

The purpose of this Plan is to provide for the effective utilization of water resources and to assure that there is water of such quality and quantity as required to meet essential needs in case of a nuclear disaster or other emergency of widespread significance. Provisions are made for actions at all levels which will be coordinated and complement each other.

Plan.

A. Establishes an Emergency Water Resources Agency and defines the functions of that Agency, both pre and post attack.

B. The objective of the Emergency Water Program is to assure safe and adequate water for human survival (potable water and water for waste disposal), fire protection, industry, and agricultural and livestock requirements through:

1. Effective management and use of water resources during the emergency and recovery period.

2. Conservation and effective use of manpower, materials, equipment, and supplies required for water supply operations.

3. Operation, repair, and restoration of facilities to provide water for essential needs.

C. First priority for water use would be accorded to human needs, including medical care. Otherwise, water resources will be allocated by the Director of Emergency Water Resources Agency, pursuant to this Plan and to the policies herein set forth. Should there be conflicts or other major problems which cannot be reconciled, they shall be submitted to the Resource Priorities Board for recommendations to the Governor. If there is complete isolation, temporary priorities may be prescribed by the Local Chief Executive (the nominal head of local government as designated in the Local Emergency Plan) to the end that lives may be protected and that recovery may be accomplished. Each level of government subordinate to the State will exhaust the capabilities within its jurisdiction before seeking State assistance.

Authority.

Actions taken by the State of Alabama under this Plan are pursuant to:

A. State of Alabama, Governor's Executive Order No. 27, signed March 3, 1966.

B. Code of Alabama (1940) (Recomp. 1958), Title 22,
Chapter 3, Sections 117-131 and 137-140 inclusive.

PART SEVEN

INTERSTATE AGENCIES, INVOLVING ALABAMA,
WHICH ARE CONCERNED WITH WATER RESOURCES

Preceding Page BLANK - ^{NOT} FILMED

List of Interstate Agencies

1. Resources Advisory Board, Southeast River Basins
 - (a) Southeast Basins Committee
2. The Appalachian Regional Commission
3. Gulf States Marine Fisheries Commission
4. Note Pertaining to the Publication: - "Water Resources and Economic Development in the South"

Preceding Page BLANK - NOT FILMED

I N T E R S T A T E A G E N C I E S

1. RESOURCES ADVISORY BOARD, SOUTHEAST RIVER BASINS

Organization. The Resources Advisory Board, Southeast River Basins, is an interstate agency established by the States of Alabama, Florida, and Georgia. It was organized in March, 1964 in conformance with the provisions of legislation adopted by those States. Members of the Board are appointed by the Governors of each of the participating States and a Chairman is selected by the States' members from within the area of the Southeast River Basins. In 1965, South Carolina joined, followed in 1966 by Mississippi, so that now five states are represented on the Board.

Geographic Area of the Board. At present the total area in the Southeast River Basins area is 184,049 square miles which is equivalent to 117,791,360 acres. In Alabama 44,031 square miles or 28,179,840 acres is included in this basin area.

Principal Functions of the Board. The Board continues coordination among the Federal and State governments engaged in the sphere of water and related land resources. It reviews programs and projects needed in the near and distant future and promotes the proper development of programs and facilities to obtain the desired results. The Board advocates and reviews the implementation of the comprehensive plan of improvement for the conservation, utilization, and development of the water and related land resources plan of the U.S. Study Commission, Southeast River Basins and comparable plans of other entities within the area and to the extent practicable, obtains proposed plans for and offers advice and comments on projects and facilities having a substantial effect on the area water and related land resources proposed by State or Federal agencies and by private and local interests.

The duties of the staff of the Resources Advisory Board are principally in the fields of coordination, administration, and professional advice and generally does not involve the performance of detailed studies and investigations. The staff members are not employees of any State or Federal agency.

(a) SOUTHEAST BASINS COMMITTEE

The responsibility of the Committee is to establish means and procedures to promote coordination of the water and related land resources development and activities in the Southeast River Basins by the States, Federal agencies and private and local interests. The Committee is to suggest changes in law or policy which would promote coordination or resolution of related problems.

The Committee is comprised of thirteen members, to-wit: - five states - Alabama, Florida, Mississippi, South Carolina, and Georgia; the Interstate Resources Advisory Board; and seven Federal agencies - Departments of Agriculture; the Army; Commerce; the Interior; Health, Education and Welfare; and Labor; and the Federal Power Commission.

In Alabama the Geological Survey of Alabama, the Department of Industrial Relations, and the Water Resources Institute collect the data and conduct research programs for this Committee.

2. THE APPALACHIAN REGIONAL COMMISSION

The Governor of Alabama is one of the thirteen state members of the Appalachian Regional Commission established under the Federal Appalachian Regional Development Act of 1965 (Public Law 89-4). The Act reads in part "to provide public works and economic development programs and the planning and coordination needed to assist in development of the Appalachian Region" through State-Federal programs.

3. GULF STATES MARINE FISHERIES COMPACT

The State of Alabama is a member of the Gulf States Marine Fisheries Compact along with the States of Florida, Mississippi, Louisiana and Texas. Provisions of the compact are set forth in Part Two of this Report under the section on statutes.

4. NOTE:

The Agricultural Policy Institute, North Carolina State University in cooperation with the Council of State Governments and the Southern Land Economics Research Committee published a work that had as a primary objective to delineate problems of economic development in the South as they relate to water resources, potentialities for contribution of social science research to solving these problems, and consider how to organize for this contribution in an interdisciplinary setting. Title of the work: "Water Resources and Economic Development in the South", August, 1965. (Alabama is included in this publication.)

PART EIGHT

PROGRAMS RELATING TO WATER

Preceding Page BLANK - NOT FILMED

PROGRAMS RELATING TO WATER RESOURCES

The State of Alabama conducts a continuing program on water resources:

- I. Research
- II. Data Collection and Interpretation
- III. Planning
- IV. Regulation: - Construction and Development

Much of the research pertaining to these programs is in cooperation with local and Federal agencies. Water resources research is being conducted by the Water Resources Institute at Auburn University under the provisions of the Water Resources Research Act passed by the Second Session of the 88th Congress in July 1964. (NOTE: The Alabama Act appears in Part Two of this Report.)

The Geological Survey of Alabama is carrying out a program of water-resources investigations in the State in cooperation with the U.S. Geological Survey. (NOTE: Reference to the Creation of the Geological Survey of Alabama may be found in Part Six of this Book.)

I. RESEARCH

A. Hydrogeologic Study of Alabama

Objective: Interpretation of subsurface data in regard to the influence that geology has on streamflow characteristics, ground-water occurrence and movement, and changes in the chemical character of surface and ground water as the water moves down gradient. The objective to study geology as a container for water as an aid in selecting stream-gaging sites, analysis phase of bridge-site reports, analysis of anomalies in streamflow, and determining changes in the chemical character in its movement down gradient.

B. Flood-Frequency Synthesis for Small Streams

Objective: Develop a method for synthesizing a long-term flood-frequency curve for a small gaged watershed from rainfall records. Extend flow-frequency relations derived for small gaged watersheds to small ungaged watersheds.

C. Rates of Runoff from Small Rural Watersheds

Objective: Develop flood-frequency relations for rural watersheds of 1-5 square miles in Alabama on the basis of rainfall-runoff relations, long-term weather records, and physiographic factors.

D. Verification of Hydraulic Computation Methods for Bridge Sites

Objective: The purpose of this Study is to verify methods of computation used in the hydraulic analysis of proposed bridge sites, particularly with regard to stage-discharge relations, bridge backwater, and flow distribution through multiple bridges.

E. Field Measurement of Hydraulic Factors-Performance of Channel Changes

Objective: The purposes of this Study are to investigate the performance of channel changes made by the Highway Department for the purpose of improving the hydraulic features of a bridge site, to determine the reasons for the failure of any such channel change to function as planned, and to establish guidelines for improving the design of future channel changes.

F. Wragg Swamp Canal Investigation

Objective: The objectives of this project are to investigate (1) the relations of duration and intensity of rainfall to peak rates of runoff; (2) the hydraulic performances of the canal; and (3) the progressive changes in above relations during periods of urbanization.

G. Sewage Lagoon Study

Objective: Considerable requests have been received by the Health Department from municipalities for approval to use sewage lagoons as a method of waste disposal. The Health Department requested information concerning the possible effects on ground water supplies in the areas where lagoons are proposed. The objective of the Study is to determine the movement and change in chemical character of water in the saturated zones below the sewage lagoon.

H. Field Measurement of Hydraulic Factors - Performance of Culverts

Objective: The objectives of this Study are to determine the causes of sedimentation in culvert barrels and to establish guidelines in culvert waterway design serving to reduce the adverse effects of sedimentation on peak discharge capacity.

I. The Development of Geochemical and Geophysical Techniques as an Aid to Determining Availability of Ground Water in Limestone Terrains.

Objective: The purpose of this Study is to determine the effectiveness of a series of geochemical and geophysical techniques in determining the location, quality, and quantity of ground water in the massive limestone beds underlying the Tennessee Valley area of North Alabama. These limestone beds are the principal source of water for municipal, industrial, irrigation, and domestic use in the area. Ground water occurs in the limestone beds in solutionally enlarged openings along bedding and joint planes. Industrial expansion and the resulting increase in population and water use indicate the need for more effective methods to determine the occurrence and availability of water in a limestone terrain.

J. Factors Affecting the Deterioration of Culvert Pipe and Drainage Structures in Small Drainage Basins in Alabama

Objective: The project is directed toward a detailed study of soil and water factors affecting the deterioration of drainage structures in small stream basins in Alabama.

K. Geologic, Mineral and Water Resources Factors to Aid Planning and Economic Development in Growth Areas

Objective: The Study will provide basic geologic, water and mineral resources data needed for economic development in growth areas in the form of an atlas.

II. DATA COLLECTION AND INTERPRETATION

A. Collection of Basic Records - Surface Water

Objective: To determine and document the amount and availability of surface water in Alabama. The information collected is needed for planning the most beneficial and economic use of this important resource.

B. Collection of Basic Records - Ground Water

Objective: To determine and document water-level trends in aquifers as an aid in appraising the status of the ground-water reservoir.

C. Water Resources of the Upper Tombigbee-Black Warrior River Basin

Objective: A small percentage of the total water resources potential of the area is now being utilized, and additional water data

are needed to solve future problems that are inseparable elements of foreseeable development. Major objectives are (1) to investigate the water resources with emphasis on the location of large supplies of good quality water, and (2) the identification of subsurface aquifers and ground-water recharge areas by geologic mapping to aid in determining water availability, sources of base flow to streams, and areas of possible contamination.

D. Water Resources of the Upper Coosa River Basin in Alabama

Objective: To provide geologic maps (1 inch = 1 mile) and data on the occurrence, availability, and quality of water resources of seven counties in northwestern Alabama.

E. Low-Flow Investigations in the Tennessee River Basin in Alabama

Objective: To define low-flow characteristics by supplementary existing basic data program with a network of low-flow partial-record stations.

F. Hydrology of Choctawhatchee-Escambia River Basins

Objective: The area of study is rich in natural resources but has lagged in development. If navigation on the Choctawhatchee River and processing of iron ore in the area materialize, accelerated industrial development and population growth are anticipated, making imperative the need for water facts to plan future water supplies and to control pollution. The primary objective was to appraise the overall water situation in the area, and make the facts available to water users and managers.

G. Water Resources of Southwest Alabama

Objective: Appraisal of the water resources potential with emphasis on availability of large supplies of good quality water to be depicted on maps showing surface geology, water availability, and chemical character of the water.

III. PLANNING

The State Planning and Industrial Development Board has the function and duty of adopting an official master plan for the physical development of the State. Such a master plan with the accompanying maps, plats, charts, and descriptive matter, which show the Board's recommendations for the development of the State and may include among other things the general locale, character and extent of waterways, water front developments, flood prevention works, forest reservations, drainage and sanitary systems, and works for the prevention of stream pollution.

The State Soil and Water Conservation Committee in cooperation with the Soil Conservation Service of the United States is responsible for watershed planning and watershed construction activities.

Programs conducted by the Geological Survey of Alabama and the U.S. Geological Survey are as follows:

A. Project Planning, Reports, Dissemination of Information

Objective: The major problems concerned proper program planning, completing, reviewing, and improving reports, and replying to requests for data. Objective is to provide adequate planning for personnel, realistic schedules for completion of projects, and adequate dissemination of water resources data.

B. Flood Studies and Bridge-Site Investigations

Objective: The objectives of this project are to supplement flow information by operation of a statewide crest-stage partial-record network, to investigate floods of miscellaneous sites, and to provide site reports for design of bridges and culverts.

C. Study of Conservation Lakes

Objective: Interpret existing information in terms of small reservoir operation, make reservoir site reports, and study the performance of existing structures under local hydrologic environment and operating conditions.

D. Relation of Oil and Gas Industry to Water Resources

Objective: The objective of this study is to provide the facts necessary to aid in solution to water problems associated with oil and gas activities in Alabama.

E. Rapid Appraisal of Water for Industrial Development

Objective: Upon request, analyze the water problems in

specific geographic locations; evaluate current data on occurrence, availability, and quality of water; outline alternatives for development of water supplies and indicate probable effects of utilization.

F. Water Development Site Studies, National Park Service

Objective: Numerous requests have been received from the National Park Service for assistance in supplying information on the availability of ground water as an aid in developing a water supply for park facilities. The objective is to make water appraisals of site areas designated by the Park Service to provide information on the availability and chemical quality of ground water as a source of public supply.

IV. REGULATION: CONSTRUCTION AND DEVELOPMENT

A. Flood Control

Flood damage remains one of the dominant problems related to water resources. Efforts at flood control in Alabama are entirely of private and federal origin. There is no state regulatory authority concerning flood control.

B. Water Supply

Domestic and industrial water supply demands have been increasing steadily. There are over 366 public water supply systems in the entire State. Many of these systems are supplied by ground water wells, while others get water directly from streams.

C. Water Quality Control

Maintaining the quality of the vast water resources of the State is the responsibility of the Water Improvement Commission. Within its jurisdiction, the Commission has acted to protect Alabama's waters in the interest of the public while permitting their reasonable use for the growth and development of the State. The Commission recognizes that problems of pollution over which it presently has no control exist to a limited extent and will recommend legislation expanding its authority to cover these situations.

D. Hydro-Electric Power

There are no regulatory agencies in Alabama concerned with water quantity in connection with construction of a structure for hydro-electric power.

E. Navigation and Hydraulic Structures

There are no state regulatory agencies related to navigation which affect the placement or design of hydraulic structures.

F. General Recreation

The development of water resources in the interest of flood control, water supply and other related purposes can provide large areas of water and shoreline. Since water is an essential ingredient in many recreational activities, water resources development can open up an enormous potential for outdoor recreational pursuits.

Alabama has 26 impoundments providing 386,000 acres for recreation.

G. Fish and Wildlife

The Department of Conservation, Division of Game and Fish, is charged with the responsibility of enforcement of Alabama's game and fish laws and regulations, management of the fish and wildlife resources, and research and development programs which lead to better methods of keeping these resources sufficient to meet the demands of an expanding population.

H. Well Drilling

There are no state-wide regulations related to water well drilling. There are several bills of local application pertaining to the drilling of wells in Alabama.

I. Channel Encroachments

There are no state laws regulating the control of removal of sand, gravel, and minerals from navigable streams or to enjoin or abate public nuisances as such are defined relative to floodways.

J. Use of Flood Plains

There are no state laws or regulatory agencies which review and approve or disprove of the construction of any works in the floodways of the rivers and streams of Alabama.

Preceding Page BLANK - ^{NOT} FILMED

PART NINE

ALABAMA WATERWAYS

Preceding Page BLANK - NOT FILMED

ALABAMA WATERWAYS*/

Alabama is among the nation's most favored states in its possession of a network of rivers with great potential for transportation use:

1. The Tennessee River
2. Warrior-Tombigbee System
3. The Coosa-Alabama River System
4. Private Power Dams
5. Chattahoochee River
6. Choctawhatchee and Pea Rivers
7. Tennessee-Tombigbee Waterway

No part of the State is far distant from a presently navigable river or one that is capable of being developed into a waterway. Today, of the six most important river systems - Tennessee, Warrior, Coosa, Tallapoosa, Alabama and Chattahoochee - 983 miles of these waterways are navigable for shipping, and when all development is complete, the State will boast of nearly 1,800 miles of navigable river systems. Twenty-six impoundments on these rivers give Alabama some 380,000 acres of surface water for recreation.

1. THE TENNESSEE RIVER

In the north of Alabama, the excellent Tennessee River, fully developed for many purposes and flowing within Alabama for a length of nearly 200 miles, is now carrying water-borne commerce at the rate of 13,000,000 tons annually. As a waterway, the River is contributing heavily to the prosperity and development of the area. Industrial development along the banks of the River has brought employment and increased payrolls to thousands of residents in the area. No one in the valley of the Tennessee seriously questions that the River dominates the life of the region.

There are four locks and dams on the Tennessee within the boundaries of Alabama. At Florence is Dam No. 1, which was constructed by the Army Corps of Engineers in 1926 and modified by a height increase in 1948 by the TVA. The Wilson Dam at Muscle Shoals above Florence was begun as a World War I nitrate munitions project and not completed until 1927 by the Engineers. Eighteen miles above Florence is the General Joe Wheeler Dam, a unit completed by the TVA in 1936. It includes a lock constructed by the Engineers. The remaining installation in Alabama is nine miles below Guntersville and is known as the Guntersville Dam, completed in 1939.

*/ Larson, J. E., Alabama's Inland Waterways, Bureau of Public Administration, University of Alabama, 1960.

All locks for navigation in these structures were either designed or constructed by the Corps of Engineers. The locks are of a standard 60 feet width and from 292 to 360 feet in length. However, at Wilson Dam, the TVA has just completed a new installation which is the world's largest single-lift lock. The new facility will provide for more efficient handling of the increased traffic on the River. The dimensions of the new lock are 110 feet by 600 feet. The height of the lift is 100 feet and the time required for filling the lock is twelve minutes. The lock will handle the larger tows now plying the River.

Further benefits from the Tennessee waterway may be developed for Alabama out of the plan to connect the Tennessee River with the Warrior-Tombigbee River system, thus shortening by several hundred miles the water route from the continental interior of the Ohio River Valley and the Tennessee River Valley to the Gulf of Mexico. Obviously, such a water way connection would be of the greatest importance to the State of Alabama.

2. WARRIOR-TOMBIGBEE SYSTEM

The waterway provided by the Warrior-Tombigbee River system has been described as "one of the busiest and fastest growing inland barge channels in the Southeast." Undoubtedly, this is true. Recent growth has been particularly rapid. In 1956, there was commerce in the waterway to the extent of 4,409,240 tons. Early figures for 1958 place the tonnage at 5,666,203. This represents a respectable increase of 28 percent for the two-year period. Long range growth is indicated by the fact that as recently as 1948 the tonnage figure was 2,000,000.

The Warrior-Tombigbee Rivers are located in western Alabama and eastern Mississippi. There are sixteen Alabama counties drained by the river system. Navigation on this waterway is along a 413-mile stretch from Mobile, Alabama, to Port Birmingham near the industrial city of Birmingham. The course of the waterway is almost due north and south, with some slight southwesterly flow in its upper reaches.

In recent years there have been major improvements on the waterway as river traffic has increased. Four modern locks and dams have been designed to replace twelve of the old original seventeen locks and dams. The first of these modern facilities is the William Bacon Oliver Lock and Dam at Tuscaloosa, completed in 1940. It is considered a modern structure although there are plans to improve the lock by enlarging it to 100 by 600 feet. The Demopolis Lock and Dam was opened to traffic in August 1954. It replaced four of the old-type facilities. The third modern facility is the Warrior Lock and Dam about 50 miles upstream from the Demopolis installation. This lock and dam was opened in October of 1958. The fourth completion is the Jackson Lock and Dam located 119 miles above Mobile. With the opening of the Jackson Lock

and Dam, the waterway was modernized from Mobile to Tuscaloosa, with the effect of reducing time in transit for the average tow from Birmingham to Mobile from 160 hours to 120 hours.

With full modernization of the Warrior-Tombigbee downstream from Tuscaloosa nearly complete, there are plans for further improvement that call for replacing existing Locks and Dams 13, 14, 15 and 16 which now provide a navigable channel above Tuscaloosa. These structures were built between 1905 and 1915 and are equipped with lock chambers considered inadequate for modern tows. The four dams are located within a sixteen and one-half mile distance in the river and provide a total lift of but 60.1 feet. The short distance between these dams and the limited capacities of their locks serve to create serious traffic congestion in that stretch. To correct this condition, the present planning is to modernize the barge channel between Tuscaloosa and the John Hollis Bankhead Lock and Dam at the upper reach of the waterway by replacing old Lock and Dam No. 13 with a new high-lift structure, the Holt Lock and Dam. This structure will eliminate obsolete Locks and Dams 13, 14, 15 and 16. Funds were provided by the Congress in 1959 for planning work in connection with this facility and construction is scheduled for completion in 1968.

The headwaters of the Warrior River are formed by the Mulberry Fork, Locust Fork and the Sipsey Fork. Development of these streams by multiple-purpose dams and reservoirs is now well past the planning stage. As a long-range plan, the Corps of Engineers has proposed multiple-purpose dams and reservoirs on each of the three streams. When this is accomplished, storage of water during the wet season will avoid serious flooding downstream, and release of impounded water during the dry months will assure a regular flow on the waterway. Additionally, these facilities would have value as sources of hydro-electric power, as recreation areas, and for water supply and pollution abatement purposes.

Under a license granted by the Federal Power Commission, the Alabama Power Company presently constructed a dam on the Sipsey Fork known as the Lewis Smith Dam. The Dam is 300 feet high and is one of the highest dams east of the Rockies. It is expected to produce 157,500 kilowatts of electricity. From the lake created of 21,000 acres, water is available for industrial and domestic use. The City of Birmingham, for example, now plans to tap this source for additional industrial water supply.

Alabama Power Company is also licensed to construct a hydro-electric installation in the John Hollis Bankhead Lock and Dam and has a permit to put a power installation in the Holt Lock and Dam. Additional generating power of 45,000 kilowatts is expected from the Bankhead Lock and Dam facility and 40,000 kilowatts is estimated from the Holt Lock and Dam now under construction.

No immediate work is contemplated on the Locust and Mulberry Forks, although the Warrior Electric Cooperative Association of Oneonta has a license for two dams on the Locust Fork.

In summary, the Warrior-Tombigbee Waterway is rapidly approaching a condition of becoming one of the nation's finest inland waterways. A river system which was first developed with a three-foot channel to provide for shallow-draft steamboats, is now in the final stages of a modernization program which will enable powerful diesel tugs with their deep-draft tows to operate with high efficiency.

3. THE COOSA-ALABAMA RIVER SYSTEM

The Coosa-Alabama River system extends in a general northeast-southwest direction diagonally across the entire State of Alabama. From its source in the northwestern corner of Georgia to Mobile, Alabama, on the Gulf, it comprises a river system, together with the conjoining Tallapoosa, of extraordinary promise as a waterway. In all the Southeast, it is second only to the Tennessee River system in size and in length.

The drainage basin of the system is approximately 350 miles long and about 60 miles in width. The headwaters of the Coosa River are the Etowah and Oostanaula Rivers which unite in Georgia to form the Coosa. In turn, the Coosa unites with the Tallapoosa a few miles above Montgomery, Alabama, to form the Alabama River which flows southwestward to join the Tombigbee River thus forming the Mobile River. The area which might be considered as benefiting from development of the Coosa-Alabama waterway includes twenty-nine Alabama counties containing one-third of the State's population.

4. PRIVATE POWER DAMS

Because the Coosa River drops nearly 500 feet in a distance of approximately 280 miles, it is a stream particularly well suited to development for hydro-electric power. As a result of this power potential, in addition to the long-standing interest in navigation on the stream, the Coosa has been the subject of many Federal surveys and of considerable legislation. The most recent evidence of this is an Act of the Congress in 1954 which suspended the Army Engineers' comprehensive plan for the development of the Coosa to the extent that it included provisions for power development. Subsequent to this legislation the right to develop power on the Coosa was granted under license of the Federal Power Commission to the Alabama Power Company.

The Alabama Power Company for many years has been operating Lay, Mitchell and Jordan Dams on the Coosa for hydro-power purposes. On the

nearby Tallapoosa River the Company has three other power dams in operation - Thurlow Dam, Yates Dam and Martin Dam.

The plans of the Alabama Power Company are designed to make provision for multiple-purpose river development. Under the license granted by the Federal Power Commission, the Company is constructing four new dams on the Coosa and modifying one existing facility. Plans for these dams were approved only after extensive consultation between the Company and the Corps of Engineers, Fish and Wildlife Service, State Department of Conservation, State Department of Health, and the State Highway Department. When the program is completed, a large measure of flood control will be effected by the series of dams and reservoirs; recreational areas will be provided; water supply sources for domestic and industrial uses will be increased; downstream flow will be regularized with benefits to pollution abatement; and, for transportation, the installation of locks by the Government will make navigation possible over the length of the Coosa.

In summary, the present initiative for improvement of the Coosa-Alabama Rivers is in the hands of private enterprise. Development is being stimulated by the growing need for electric power in the State and the potential of the Coosa River for realizing a substantial part of this need. The primary purpose of the development is, admittedly, hydro-power, but numerous public benefits will be realized. Ultimately, the Coosa may be opened as a waterway for river traffic.

Three major locks and dams, together with smaller dredging and flood control operations are a part of the overall Coosa-Alabama River development plan.

Millers Ferry Lock and Dam on the Alabama River in Wilcox County, about ten miles northwest of Camden, was begun in April 1963. It is scheduled for completion in 1969 at a cost of \$58,500,000. The lock will have inside chamber dimensions of 84 by 600 feet and a maximum lift of 48 feet. The dam will back up the Alabama to a minimum depth of nine feet from the upper end of the Clairborne Reservoir to the Jones Bluff Dam above Selma, creating a navigating channel 105 miles long. The power plant will produce 433,900,000 kilowatt hours of electrical energy a year. The lake area will be 27 square miles with a shoreline over 500 miles long.

In April 1965, work on the second lock and dam on the Alabama River was begun. The Clairborne Lock and Dam is in Monroe County. It is scheduled for completion in 1969 also, at a cost of \$24,000,000.

The Lock will have the same inside dimensions as the Millers Ferry Lock, but with a maximum lift of thirty feet. The backup of the Alabama River will provide a nine-foot navigable channel to Millers Ferry, sixty miles upstream.

There will be no power installation at the Clairborne Dam; the Reservoir will remain largely within the original banks.

The third lock and dam under construction on the Alabama is the Jones Bluff site, located in Lowndes and Autauga Counties. The Jones Bluff Lock and Dam was begun in March 1966, and is expected to be completed by 1973 at a cost of about \$53,000,000.

In addition to the locks and dams, the Alabama River project calls for dredging and rectifying the channel from Clairborne to the mouth of the river, eighty-two miles in distance. Thus, the development will provide a nine-foot deep channel from Montgomery to Mobile, approximately 763,000,000 kilowatt hours of electrical energy a year, a medium of control over the river floods, and recreational facilities beyond calculation.

5. CHATTAHOOCHEE RIVER

One reason why Federal funds are so prominent in river development is that many river systems have an interstate character. Certainly, this is true of the Apalachicola-Chattahoochee-Flint River system. Both the Chattahoochee and the Flint Rivers take their headwaters in Georgia, but the Chattahoochee for part of its course forms the boundary between Alabama and Georgia. The Flint River joins the Chattahoochee near the Florida-Georgia boundary to form the Apalachicola River which flows through Florida to empty into the Gulf some 100 miles distant.

6. CHOCTAWHATCHEE AND PEA RIVERS

Of limited scope, but of the greatest interest to the people of the region, is the planned development of the Choctawhatchee and Pea Rivers into navigable waterways. Both of these streams take their origins in southeastern Alabama, juncture at the Alabama-Florida border and flow across Florida to the Gulf at Choctawhatchee Bay.

The Choctawhatchee River basin covers 3,270 square miles of predominantly rural southeastern Alabama. The Choctawhatchee rises in Bullock County and the Pea River originates in Bullock County. Agriculture is the economic base of the area with forestry of considerable importance. As a result of increased mechanization of agriculture, there has been a marked decline in the population of the region since 1940 as economic opportunities were greater elsewhere for many in the population. Manufacturing - principally textiles, lumber and wood products, and food processing - is limited in quantity.

The case for the development of the Choctawhatchee and Pea Rivers suffers from the fact that both are relatively minor rivers.

7. TENNESSEE-TOMBIGBEE WATERWAY

The most challenging of current proposals for waterway developments is the plan to link the Tennessee and Tombigbee Rivers. If this is done, a new short route waterway from the Ohio and the Tennessee Rivers will be opened to the Gulf at Mobile, Alabama. Hundreds of miles of distance will be taken off the water route from the industrial centers of mid-continent America.

For sheer imaginative thinking and scope of planning, no river development proposal in recent years can rival this one. Yet the proposal is not new. A canal to join the two rivers has been in the minds of men for more than 160 years. The first actual report of a survey of the route was made in 1875. There were following surveys in 1913, 1923 1932 and 1938. In 1946, construction of the waterway was finally authorized by the Congress.

Cost of the proposed waterway will not be small. The estimate of the Corps of Engineers in 1946 was \$117,000,000. No official Corps of Engineers' estimate is now available, but the latest (1953) approved Engineers' estimate was \$227,000,000. Nonetheless, the waterway, considered for years as a proposal so chimerical as to be a dream of visionaries, is now the goal of a tri-state compact and is a subject of general discussion in the region. Construction of the waterway appears to be moving closer to reality.

Although work on the waterway has not yet actually been started, supporters of the project believe that they have made great progress and that appropriations of funds will not be much longer delayed. That this view of the matter may be entirely correct is borne out by the refusal of the project idea to die although it has suffered many serious setbacks.

a. Surveys Made.

Of the original survey made in 1874-75, the surveying engineer, Powhatan Robinson, concluded his unfavorable report with the following remarks:

"I must confess that the merits of this enterprise are utterly beyond my comprehension . . . these expensive hydraulic works, if executed, would give us, after all, nothing but a wet-weather canal, for it must be useless at least eight months of the

year. It has no national character, and therefore, must rest solely on its merits as an investment. No capitalist would accept it as a gift . . . Whence is to come the trade that is to support it?"

Mr. Robinson was, for his time, painfully right. The locks, dams, and channel improvements of the project to provide a 4½-foot channel were estimated at a cost of \$1,705,312.

Subsequent surveys and reports of the Corps of Engineers were hardly less unfavorable to the project. A 1913 report emphasized the large costs of the project and the limited benefits that would accrue to a sparsely settled rural region. Surveys in 1923 and 1932 were of the same unfavorable disposition toward the project for substantially the same reasons. However, Herbert Hoover, as Secretary of Commerce, visualized a national system of interconnected waterways which included linking the Tennessee River with the Tombigbee River. From about this time the fortunes of the proposal began to improve. The Tennessee-Tombigbee waterway became less related to the local region and greater importance was attached to its value as a link in an overall waterway system serving the industrial mid-continent with its large populations.

In the meantime, there were two developments which heightened the prospects for a favorable Engineers' report on the feasibility of the waterway. First, the Nation recovered from the depression, and, second, work on the Tennessee River by the Tennessee Valley Authority improved that stream to the point of making a connection with the Tombigbee more desirable. Pickwick Dam on the Tennessee had raised its headwaters by more than 70 feet, which made possible a gravity flow from the Tennessee through the proposed canal and into the Tombigbee. The Corps of Engineers reacted to this new situation and in 1938, made a favorable recommendation on the project - at an estimated cost of \$66,000,000. Authorization by the Congress was not forthcoming, however, until the Rivers and Harbors Act of 1946.

b. Size of Project.

What does the project actually amount to? It can only be described in this Report by general figures, though these are informative. Basically, the project is to provide the standard channel for inland navigation of nine-feet depth from Demopolis, Alabama, to the Tennessee River. Width of the channel will be 170 feet, except in the necessary divide cut between the Tennessee and Tombigbee water basins. The project has been very well described in a report of the Tennessee-Tombigbee Waterway Authority:

"The project is to provide a channel with a minimum depth of nine feet and a minimum width of one hundred seventy feet, except in the divide cut, for a total distance of two hundred fifty-three miles from Demopolis, Alabama, to the Pickwick Pool on the Tennessee River a little northwest of Iuka, Mississippi. Ten locks will be constructed to overcome the difference in elevation between Demopolis and the Tennessee River. The waterway may be divided into three sections - the river section from Demopolis to the junction of the East and West Forks of the Tombigbee River near Amory, a distance of forty-five miles; and the divide section completing the waterway to the Pickwick Pool, a distance of forty miles.

"The river section will generally follow the existing channel of the Tombigbee River. A lift of seventy-three feet above sea level - the pool elevation for the Demopolis Lock and Dam - to one-hundred-ninety feet above sea level will be accomplished by four locks. The channel will be dredged where necessary to provide the authorized minimum depth of nine feet and a minimum bottom width of one-hundred-seventy feet.

"Numerous cutoffs will be made to eliminate winding portions of the River, of which the longest and deepest will be the Rattlesnake Bend cutoff, avoiding about ten miles of tortuous channel between Demopolis and Gainesville. Twenty-one cutoffs are planned in all to shorten the River section by approximately thirty-one miles.

"The lateral canal section will leave the River near Amory, skirt the eastern edge of the valley, bypassing numerous sharp bends in the Tombigbee and Mackeys Creek channels and join the latter at the Narrows near Bay Springs, it will be constructed partly by excavations and partly by levees. Five locks will lift the canal from an elevation of one-hundred-ninety feet to that of three-hundred thirty feet. Since virtually all the lateral canal will be above the water table and will traverse sands of high permeability, one of the major design problems will be the prevention of seepage loss."*/

* / The Tennessee-Tombigbee Waterway Development Authority, The Tennessee-Tombigbee Waterway Story, pp. 10-12.

Although the Tennessee-Tombigbee Waterway was authorized in 1946, later developments cast a layer of doubt over the entire project. Several efforts in the Congress, in the years 1949 and 1950, to provide funds for a start on the construction of the Gainesville, Alabama, lock and dam - the first of ten locks and dams in the system - were unsuccessful as the House refused to adopt Senate amendments to appropriation acts for this purpose. Finally, in 1951, a further and more serious setback was received, when, after a lengthy hearing before a Sub-Committee of the Committee of Appropriations of the House, the project was shelved and relegated to the "deferred for re-study category."

The reasons for this action by the House Sub-Committee after the Congress had authorized the project in 1946 and had appropriated approximately \$714,000 for planning work are not entirely clear. One suggested explanation is that there was insufficient local support for the project at the time. Another reason advanced is that the project was a casualty of an "economy-minded" Congress. Still, a third possible explanation is that the project was shelved because of a controversy over the Corps of Engineers' benefit ratio. The Corps had reported a ratio showing a margin of benefits of 15 percent in 1947. This ratio was disputed by a special investigating staff of the House Appropriations Committee. The position of the investigating staff was that the methods and evaluations of the Corps were faulty and that a benefit ratio of 0.27 should be assigned to the project. In the resulting dispute, the case for the Waterway was temporarily lost.

Developments since 1951 have been more encouraging for the project. In 1956, the congressional delegations of Alabama and Mississippi were able to secure funds for a new study of the Tennessee-Tombigbee by the Engineers, thus bringing the project off the shelf where it had collected dust since 1951. Local support and enthusiasm for the Waterway once more became evident. By the end of that year, the Governors of Alabama and Mississippi were discussing an interstate compact for the development of the Waterway. This compact was subsequently drawn, authorized by the Legislatures, and signed jointly by the two Governors at Columbus, Mississippi, in May of 1958. Later in that year the compact was approved by the Congress and signed into law by the President of the United States.

Under the provisions of the compact, the Tennessee-Tombigbee Waterway Authority was established. The Authority has its headquarters in Columbus, Mississippi, and is supported by appropriations from the two States. Currently, Alabama has appropriated \$100,000 and Mississippi \$80,000. The compact is an open compact in that other interested states may become parties. Tennessee has now become the third member state - a natural and appropriate move since interest in a short water route to the Gulf developed in Tennessee earlier than in either Alabama or Mississippi. It is possible that other states in the Ohio River Basin will join the compact later.

Alabama's interest in the proposed Waterway is clear and unmistakable. The project holds definite promise for speeding the transformation of Alabama from a rural into a front-ranking industrial state. Mobile, as a port city on the Gulf, will benefit greatly as the Waterway will shorten distances to points of inland cities by hundreds of miles. Because the Waterway will be a slack-water route, with very low streamflow, it is expected to be attractive to barges and tows which will save by avoiding the current of the Mississippi River on the upstream run. A further major advantage to be gained by construction of the Waterway would be the linkage of the Warrior-Tombigbee Waterway with the Coosa-Alabama and the Chattahoochee-Flint-Apalachicola Waterways through the canals of the Gulf intra-coastal channel.

Preceding Page BLANK - ^{NOT} FILMED

PART TEN

MAPS RELATING TO THE ALABAMA WATERWAY SYSTEMS

Preceding Page BLANK - NOT FILMED

MAPS RELATING
to the
ALABAMA WATERWAY SYSTEMS

1. Map of Alabama showing Locations of Dams and Reservoirs Representing Principal Sources of Stream Flow Regulation.
2. River Basins in Alabama.
3. Map of Alabama showing Area Variation in Median 7-Day Low Flow of Minor Streams.
4. Bear Creek Watershed.
5. Appalachian Counties of Alabama.

Preceding Page BLANK - *NOT FILMED*



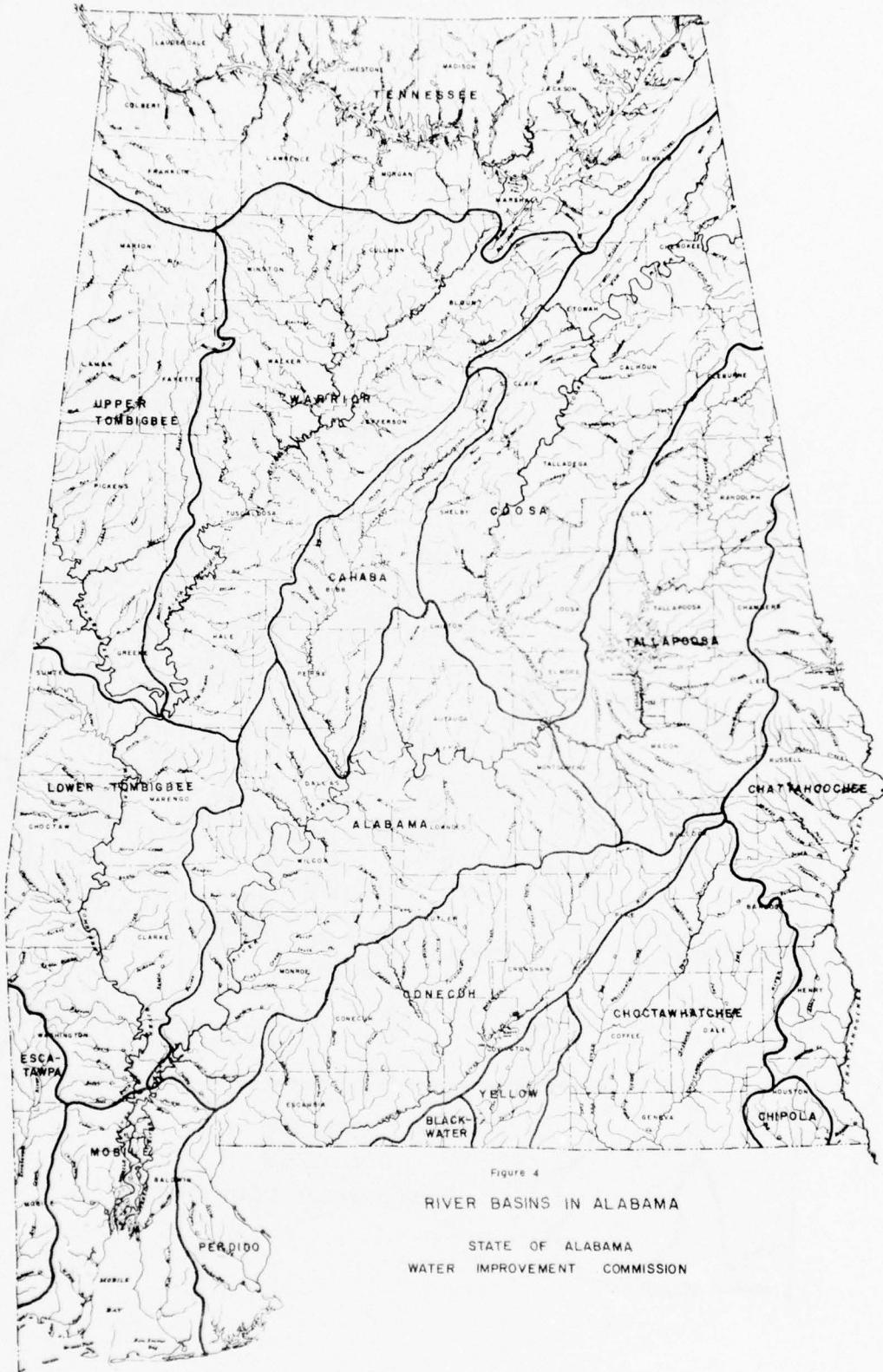
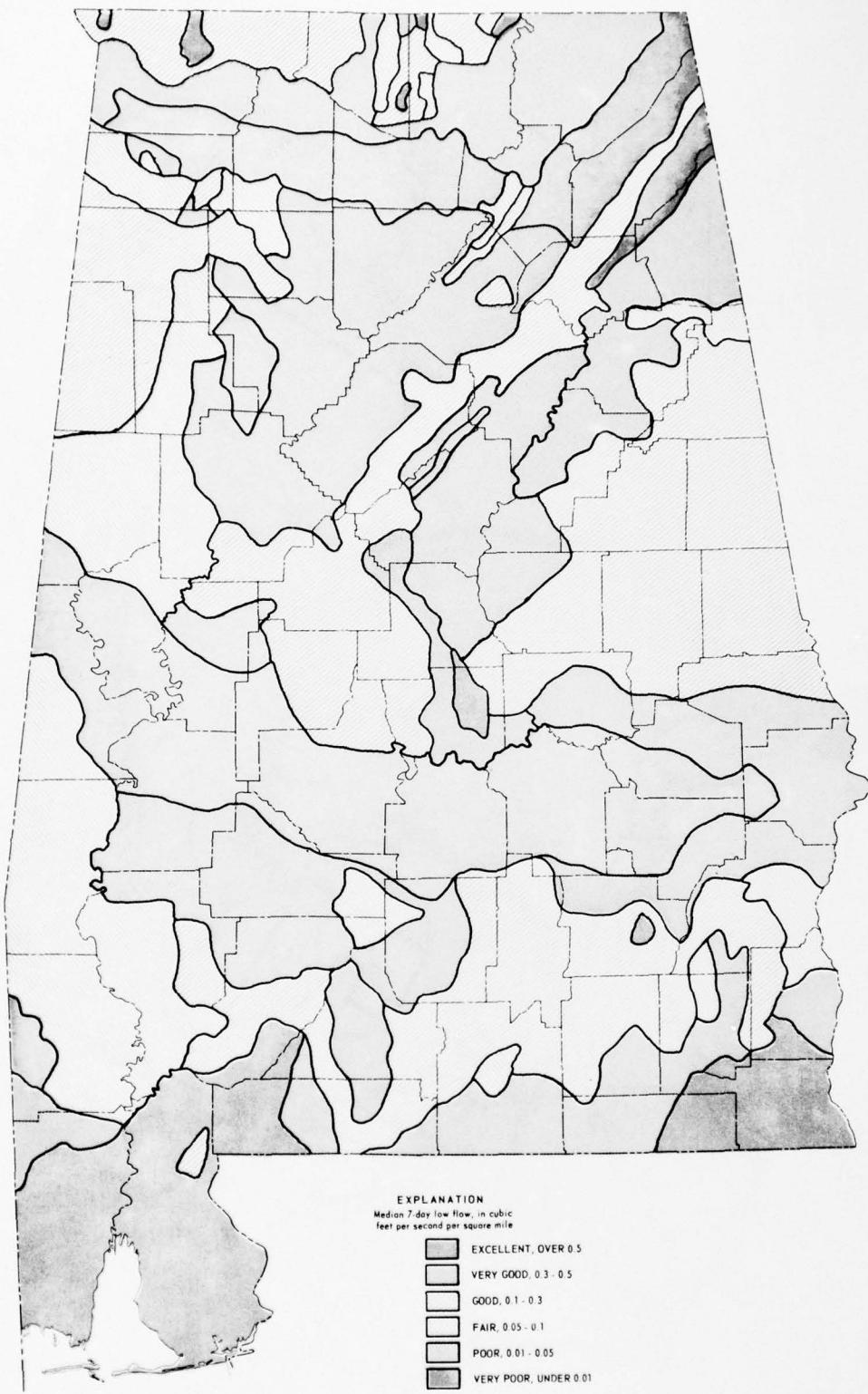


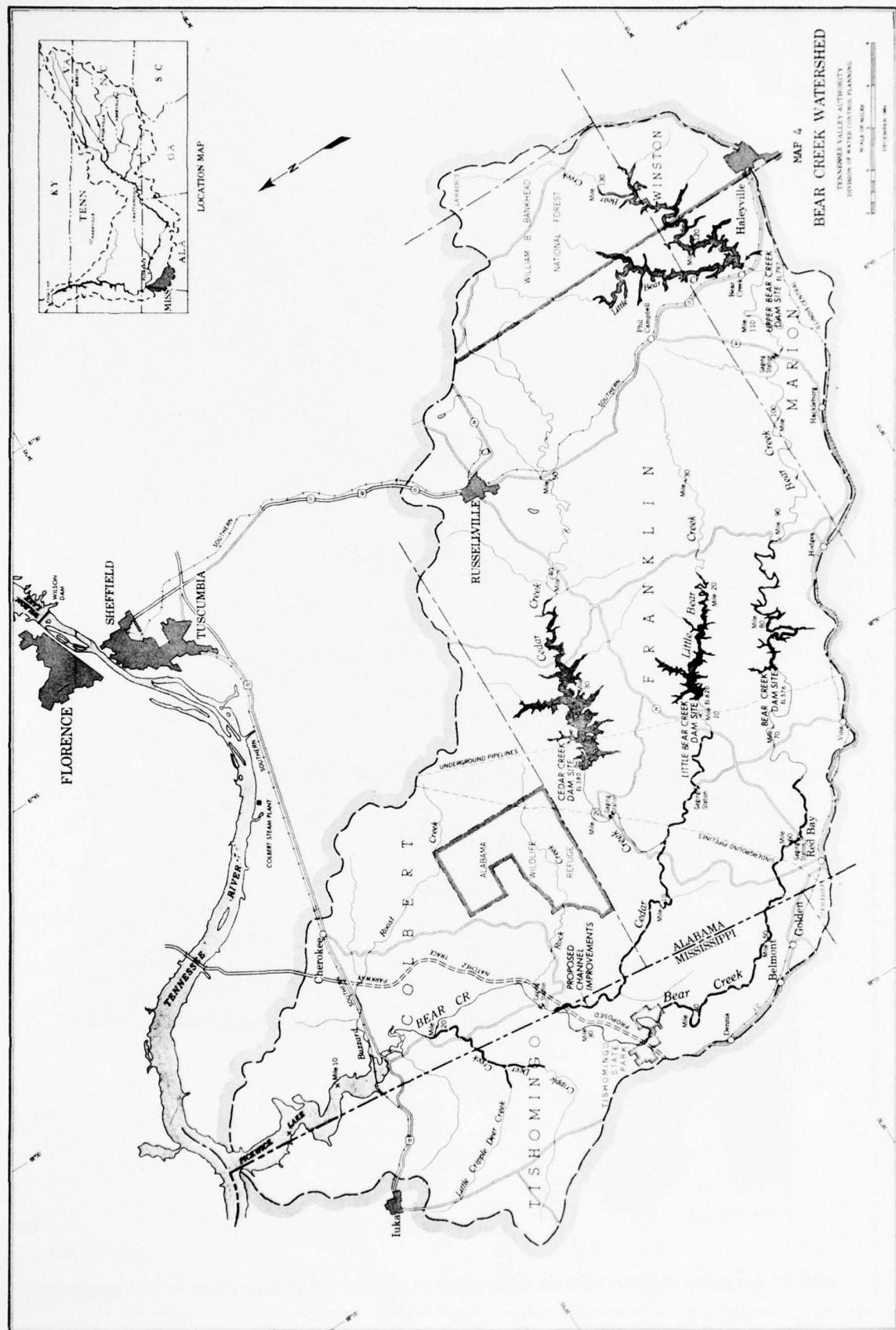
Figure 4

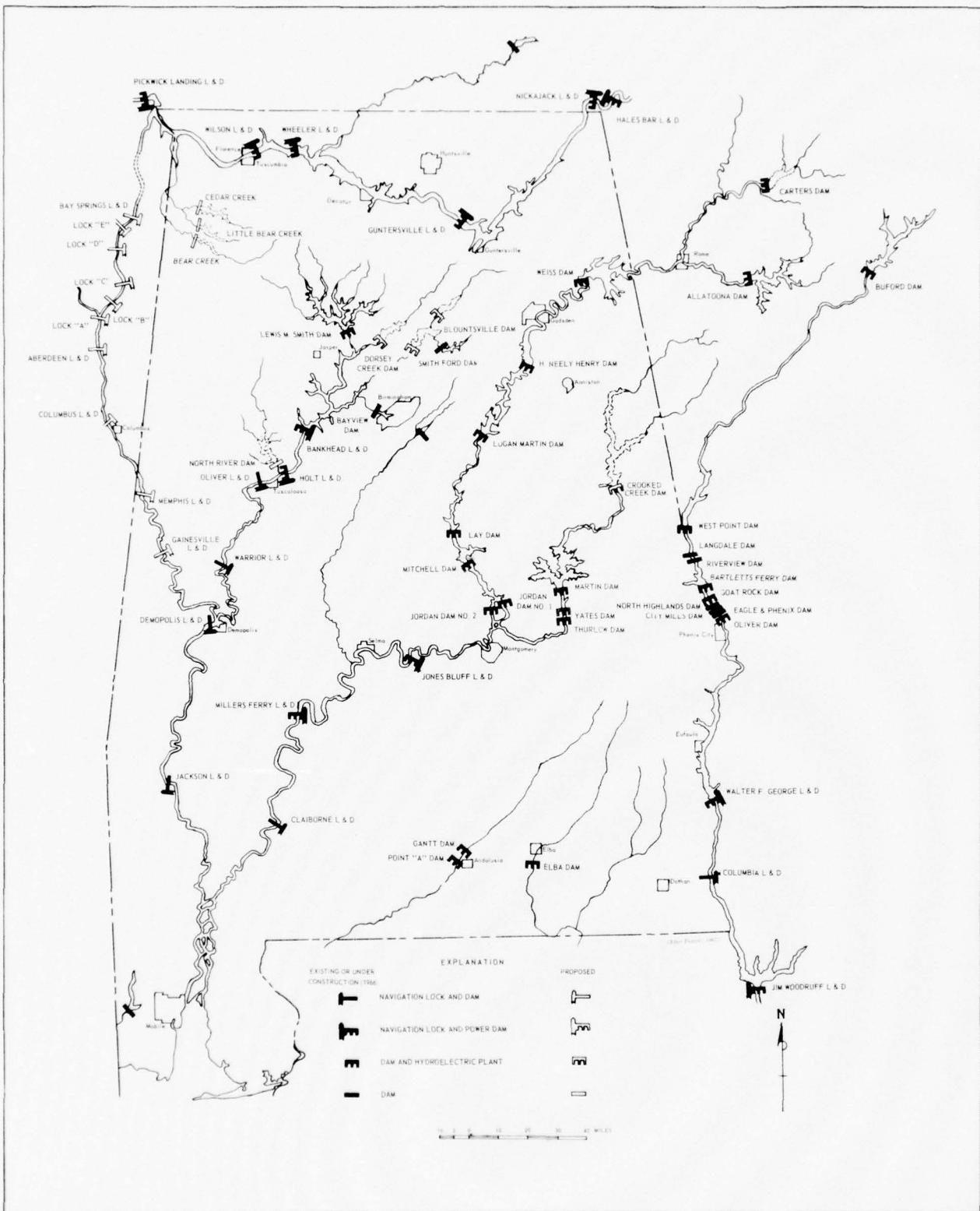
RIVER BASINS IN ALABAMA

STATE OF ALABAMA
WATER IMPROVEMENT COMMISSION



MAP OF ALABAMA SHOWING AREAL VARIATION IN MEDIAN 7-DAY LOW FLOW OF MINOR STREAMS





Preceding Page BLANK - *NOT FILMED*

WRC-0667

June 1967

GEORGIA LAWS, POLICIES AND PROGRAMS
PERTAINING TO
WATER AND RELATED LAND RESOURCES

By

GEORGE ROY ELMORE, JR.

Final Report
Project No. B-2701
Contract No. DACW55-67-C-001
Initiated: July 1, 1966
Completed: June 30, 1967

Prepared in cooperation with the U. S. Army Corps of Engineers
Office of Appalachian Studies
Cincinnati, Ohio

WATER RESOURCES CENTER
GEORGIA INSTITUTE OF TECHNOLOGY
ATLANTA, GEORGIA 30332

*NOT
Preceding Page BLANK - FILMED*

FOREWORD

Section 206 of the Appalachian Regional Development Act (Public Law 89-4) provides that the Secretary of the Army, in cooperation with the Appalachian Regional Commission, other Federal agencies, and the States concerned, shall prepare "a comprehensive plan for the development and efficient utilization of the water and related resources of the Appalachian region . . . (as) an integral and harmonious component of the regional economic development program authorized by this Act." The Secretary's responsibility with respect to Section 206 was assigned to the U. S. Army Corps of Engineers, which established the Office of Appalachian Studies for that purpose at Cincinnati, Ohio.

In order to carry out the coordination required by the Act, the Office of Appalachian Studies has worked with the other agencies and the States involved in collecting information regarding laws, policies, and programs as well as plans concerned with the development and utilization of water and related resources. Reports containing much of this information for the nine States which are in the Ohio River Basin have been prepared in connection with the Ohio River Basin Comprehensive Survey. The other States in the Appalachian region have been asked to prepare similar reports. The Water Resources Center at the Georgia Institute of Technology was asked to prepare the report for Georgia, which lacks a comprehensive State water resources planning and coordinating agency.

The background and current status of the legislative and organizational framework for the administration of Georgia's water resources are described in this report. Pertinent policies, regulations, and programs are summarized. Important water- and related land-resource developments

are inventoried, and a bibliography of important references and data sources is appended.

Laws, organizations, policies and programs described in the body of the report were current as of December 31, 1966. Legislation enacted during the 1967 Regular Session of the General Assembly is summarized in an appendix.

Information on laws includes pertinent parts of the State constitution, statutes, regulatory measures, and case law as defined by significant court decisions. The administrative structure is outlined in terms of organic laws and administrative actions concerned with powers, duties, procedures and programs. Agencies and organizations covered include State, interstate, special district, and local entities concerned significantly with the management of Georgia's water resources. Agency programs are described, with emphasis on research, data collection, planning, construction, regulation, drainage, irrigation, erosion and sedimentation control, and preservation of reservoir sites.

In general, the report follows the outline used to prepare similar reports for the U. S. Army Corps of Engineers' Ohio River Basin Comprehensive Survey.

TABLE OF CONTENTS

	Page
I. STATE LAW	1
A. Synopsis	1
B. Basic laws	3
1. State constitution	3
2. Statutes	5
a. Rice cultivation	5
b. Water rights	6
c. Geology	6
d. Agriculture	7
e. Health and water quality control	8
f. Drainage	10
g. Waterworks	11
h. Waterways and navigation	11
i. Water power	12
j. Game and fish	12
k. Forestry	13
l. Administration, reorganization and improvement	14
m. Soil conservation	16
n. Parks	17
o. Planning and development	17
p. Water resources planning and research	19
3. Case law	20
a. Hendrick v. Cook, 4 Ga. 241 (1847)	20
b. Price v. High Shoals Manufacturing Co., 132 Ga. 246, 64 S.E. 87 (1909)	20
c. Pool v. Lewis, 41 Ga. 162 (1870)	21
d. Robertson v. Arnold, 182 Ga., 664, 186 S.E. (1936).	21
e. Hendrix v. Roberts Marble Co., 175 Ga. 389, 165 S.E. 223 (1932)	21
f. City of Elberton v. Hobbs, 121 Ga. 749, 49 S.E. 779 (1905)	21
g. Davis v. Cobb County, 61 Ga. App. 712, 7 S.E. 2d 324 (1940)	22
h. Seaboard Air Line Ry. v. Sikes, 4 Ga. App. 7, 60 S.E. 868 (1908)	22
i. Cole v. Bradford, 52 Ga., App. 854, 184 S.E. 901 (1936)	22
j. Roughton v. Thiele Kaolin Co., 209 Ga. 577, 74 S.E. 2d 844 (1953)	22
k. Bell Industries, Inc. v. Jones, 220 Ga. 684, 141 S.E. 533 (1965)	22
l. Costley v. Long, 112 Ga. App. 758 (1965)	22

TABLE OF CONTENTS (Continued)

	Page
4. Attorney General's opinions	23
C. Water rights	24
1. Doctrine	24
2. Surface water (streams, diffused surface water, lakes, and ponds)	25
3. Groundwater	26
4. Access to lakes and streams	26
5. Diversion between basins	26
6. Eminent domain	27
D. Regulatory authority	27
1. Permits or approvals required	27
a. Drilling or abandoning wells	27
b. Impoundments	28
c. Channel encroachments	28
d. Development in flood plains	28
e. Discharge of wastes	28
f. Construction of public water supply	28
2. Water quality	28
a. Waste treatment	28
b. Flow regulation	29
II. ADMINISTRATIVE STRUCTURE	31
A. Interstate	31
1. Resources Advisory Board, Southeast River Basins	31
2. Southeast Basins Inter-Agency Committee	31
3. The Appalachian Regional Commission	32
4. Atlantic States Marine Fisheries Commission	32
B. State departments and agencies	34
1. Georgia Game and Fish Commission	34
2. State Division of Conservation	36
3. Department of Mines, Mining, and Geology	36
4. Department of State Parks	38
5. Department of Industry and Trade	38
6. Department of Public Health	41
7. State Water Quality Control Board	42
8. State Forestry Commission	44
9. Water Resources Center	45

TABLE OF CONTENTS (Continued)

	Page
10. Department of Agriculture	45
11. State Highway Department	46
12. Surveyor General	46
13. Public Service Commission	47
 C. Boards and commissions	47
1. State Soil and Water Conservation Committee	47
2. Georgia Waterways Commission	48
3. Georgia Forest Research Council	48
4. Georgia Science and Technology Commission	48
5. Georgia Recreation Commission	49
6. Engineering Advisory Board	49
7. Georgia Ports Authority	50
8. Jekyll Island--State Park Authority	50
9. Georgia Development Authority	50
10. Lake Lanier Islands Development Authority	51
11. Industrial Development Authorities	51
12. North Georgia Mountains Commission	51
13. Savannah Port Authority	51
14. Brunswick Port Authority	52
 D. Special purpose districts	52
1. Conservancy	52
2. Flood control	52
3. Sanitary	52
4. Soil and water conservation districts	52
5. Area planning and development commissions	53
6. Tributary area development associations	53
a. Upper Hiawassee Watershed Development Association . .	56
b. Twin-State Development Association, Inc.	56
c. Walker-Catoosa-Dade Development Association, Inc. .	56
 E. Other political sub-divisions	56
1. Municipal	56
2. County	58
3. Township	58
 III. POLICY	59
A. Centralized vs. decentralized responsibility for water management functions	59
B. "Home rule" concept	59

TABLE OF CONTENTS (Continued)

	Page
C. Financing	59
D. Cooperation, coordination, and cost sharing	60
1. With Federal programs	60
2. Interstate	61
3. With political subdivisions	62
4. Multi-purpose operations	62
E. Use of existing authority	62
F. Changes	62
1. Recently adopted	62
2. Recommended but not adopted	62
IV. PROGRAMS	63
A. Research	63
B. Data collection and interpretation	63
C. Planning	64
D. Construction and development	65
1. Flood control	65
2. Water supply	66
3. Water quality control	66
4. Navigation	66
5. Hydro-power	66
6. General recreation	67
7. Fish and wildlife	67
E. Regulation	67
1. Water use	67
2. Water quality	67
3. Construction	68
4. Well drilling	68
5. Channel encroachments	68
6. Use of flood plains	68
F. Drainage	68
G. Irrigation	68

TABLE OF CONTENTS (Continued)

	Page
H. Control of erosion and sedimentation	68
I. Reservoir sites	68
V. APPENDIXES	69
A. Legislation enacted during the 1967 regular session of the General Assembly of Georgia	71
B. Inventory of land and water resource development projects .	75
C. Bibliography	109

FIGURES

	Page
1. Organization of the State Government of Georgia	33
2. Organization of the Game and Fish Commission	35
3. Organization of the Department of State Parks	37
4. Organization of the Department of Industry and Trade	39
5. Organization of the Department of Public Health and the Water Quality Control Board	43
6. Soil and Water Conservation Districts and Watershed Projects . . .	54 & 55
7. Area Planning and Development Commissions	57
8. Georgia River Basins	77
9. Georgia State Parks and Wildlife Management Areas	78 & 79

I. STATE LAW

A. Synopsis

Water law in Georgia is scattered through many cases and statutes each of which deals with a limited aspect of water resources. The concern of the State courts with water has been limited and has been primarily with property rights in water. The General Assembly has incorporated brief water policy statements in laws concerning soil conservation, waterways development, water pollution control, and public water supplies. Each of these statements has been directed to the purpose of the law with which it is associated rather than toward a comprehensive water policy statement for the State. Water resources legislation enacted since the 1955 Water Law Revision Commission has cited several times the State's responsibility to see that its water resources are utilized for the "maximum benefit of the people of the State", but no current statute provides for coordination of various water programs.

The riparian doctrine of property rights in water has been adopted from the English common law by the codifiers of Georgia law and by the State courts for application to surface streams, but it has been modified by allowing reasonable uses. The Roman civil law doctrine, rather than the English common law doctrine, has been applied to diffused surface flow. This doctrine holds that an upper landowner may not burden a lower landowner by concentrating or increasing the flow which the lower must receive naturally. For groundwaters two doctrines apply. If the groundwater flows as a stream the riparian doctrine is applied. If the groundwater is percolating a landowner may withdraw it without regard to the effect of his action on adjoining landowners.

The present Georgia Constitution was adopted in 1945. It was formulated as an amendment to the Constitution of 1877 because of difficulty in calling a constitutional convention. The Constitution of 1945 is basically the same as that of 1877. It contains several provisions affecting water resources management but no statement of policy.

From earliest statehood, the legislature granted specific rights for developing water resources to private individuals and corporations and to local governments in laws concerning rice cultivation, drainage, waterworks,

canal building, navigation companies, and hydroelectric and steam power generation. During the 19th Century the legislature charged the State Geologist and the Commissioner of Agriculture with collecting information on the soils and other natural resources of the State.

In 1874 a State Board of Health was established which was short-lived. Then in 1903 the legislature again established a State Board of Health which was required to investigate water supply, sewerage, and disposal of excreta, among other duties. A Department of Game and Fish was authorized in 1911, and a Board of Forestry was authorized in 1921. In 1931, 1937, and 1943, the State natural resource agencies were reorganized. These agencies were Game and Fish, Geology, Parks, and Forestry. The State Soil Conservation Committee, the soil conservation districts, a State Planning Board, and a State Parks Department were created in 1937 in response to Federal programs.

In 1945 the General Assembly adopted, in addition to a new Constitution, the Georgia Ports Authority Act and a municipal planning and zoning enabling act of general application. In the mid-50's the game and fish and the forestry laws were revised, and water supply problems were brought to the attention of the legislature by drought. In 1953 the legislature authorized creation of the Georgia Waterways Commission and prospecting for groundwater by the Department of Mines, Mining, and Geology. The 1955 Water Law Revision Commission proposed a Water Resources Commission Act and a Water Quality Control Act which were adopted in 1957. Neither act proved effective, so in 1964 a new Water Quality Control Act established a full-time pollution control agency in the State Health Department that is directed by an independent Water Quality Control Board.

In 1965 the Water Resources Center at the Georgia Institute of Technology was designated by the legislature as the State agency to administer certain Federal funds for water resources research.

The legislature in recent years has given increasing support to the State Soil and Water Conservation Committee and the soil and water conservation districts and to the Department of Industry and Trade. These actions indicate that the concern of the legislature with water resources management has shifted from the passive 19th Century approach of allowing private and local interests to develop water uses toward an active program of encouraging

and aiding such development. But the General Assembly has not yet developed legislation for coordination and control of water or natural resources management and development. Legislation for water resources planning and coordination failed in 1966 and again in 1967.

B. Basic laws

1. State constitution

The Georgia Constitution of 1877 was adopted in an atmosphere of reaction to the plundering of the State Treasury by State officials during the Reconstruction era. Rather than a basic set of principles for government, this constitution was a detailed collection of restrictions on state government. It was amended 301 times before its revision in 1945. Earlier movements for revision had failed because the rurally-dominated legislature refused to call a constitutional convention which would have to be based on population. To avoid this difficulty the 1945 Constitution was framed as an amendment to the 1877 Constitution to be passed by the legislature and ratified by the people. This maneuver succeeded at the cost of basic reform. How little had been accomplished is illustrated by the fact that 380 amendments to the 1945 Constitution had been adopted by 1963. This led again to a reform effort. A Constitutional Review Commission submitted a draft of a new constitution to the General Assembly in 1964. While this draft was under consideration the United States Supreme Court held that state legislatures must be apportioned by population, and consequently a Federal district court enjoined the State from submitting the proposed constitution to the voters for ratification because it would have been passed by a legislature not truly representative of the people. The need for constitutional reform remains, but with a reapportioned legislature the chances for a meaningful reform have perhaps increased.

Numerous items related to water are scattered through the Georgia Constitution. These items are as follows:

- a. The title of ownership of lands abutting tidal water extends to the low water mark (Art. 1, Sec. 6, Par. 1).
- b. The General Assembly can grant municipalities and counties authority to enact zoning and planning laws (Art. 3, Sec. 7, Par. 23).

c. Members of the Public Service Commission are made constitutional officers (Art. 4, Sec. 4, Par. 3).

d. The method of appointment of the members of the Game and Fish Commission is stated (Art. 5, Sec. 4, Par. 1).

e. The Department of Industry and Trade is established, and the method of appointment of its Board of Commissioners is provided (Art. 5, Sec. 10, Par. 1).

f. The General Assembly is authorized to make payments in lieu of taxes to counties in which there are at least 20,000 acres of State-owned land (Art. 7, Sec. 1, Par. 1).

g. The General Assembly may exempt public property from taxation (Art. 7, Sec. 1, Par. 4).

h. The purposes for which the General Assembly may levy taxes over the whole State include:

1. The support of the State Government and the public institutions.

* * *

6. Constructing and maintaining State buildings and a system of State highways, airports, and docks.

* * *

8. Advertising and promoting the agricultural, industrial, historic, recreational, and natural resources of the State of Georgia.

9. Public health purposes (Art. 7, Sec. 2, Par. 1).

i. The General Assembly may grant State funds to municipalities for general or specific purposes (Art. 7, Sec. 2, Par. 6).

j. The purposes for which counties may levy taxes include:

1. Administration of county government.

2. Payment of the county debt.

* * *

7. Public health.

* * *

12. Forest fire protection and conservation of natural resources.

* * *

14. Airports, public parks, and public libraries.
(Art. 7, Sec. 4, Par. 1).

k. Unincorporated areas of counties may be districted and taxed for systems of waterworks, sewerage, sanitation, and fire protection (Art. 7, Sec. 4, Par. 2).

l. The State, state institutions, municipalities, and counties may contract for a period of up to 50 years with each other or with any public agency for the provision of facilities or services (Art. 7, Sec. 6, Par. 1).

m. The debt incurred by a county or city shall never exceed 10 per cent of the assessed value of all its taxable property. It may, however, accept in addition any Federal funds for planning public works which are to be repaid within 10 years (Art. 7, Sec. 7, Par. 1, Par. 3).

n. The creation of the Brunswick Ports Authority is authorized (Art. 7, Sec. 7, Par. 5).

o. The General Assembly is authorized to provide for municipal self-government by delegation of its powers to municipalities (Art. 15, Sec. 1, Par. 1).

2. Statutes

The Georgia Code was last revised in 1933, but some of the statutes relating to water date from as early as 1787 although most current water laws have been passed since the code revision. Most of the statutes listed below are incorporated in the 1966 edition of the Georgia Code Annotated. A few old statutes, which have been superseded, are included because they outline the development of state policy or administrative structure. These statutes are listed by subjects which are arranged in loosely chronological order based on when the subject was first treated by statute. Certain sections of the Code incorporate court decision and the common law as well as statutes; this is particularly true of water rights law. However, only statutes are described in this section of the report.

a. Rice cultivation. "An Act to regulate the opening of dams across rice grounds and the making and keeping dams for the reservoirs of water" (Act 1787, Cobb, p. 27) is the oldest statute in the present Georgia Code which deals with water. It provides that water stored over the winter

on rice grounds must be released by March 5th each year. Disputes over rights related to this act are to be settled by three court-appointed freeholders. Drainage is not prohibited if waters pass along as in the natural channel. The freeholders may require the enlargement or strengthening of any dam or wasteway they feel is inadequate. (Ga. Code Ann., Chap. 5-4).

Legislation adopted in 1866 (Ga. Laws 1865-6, p. 27) forbids diversion from natural watercourses except with the consent of affected landowners but allows the extension of drains across adjoining lands without permission upon payment for damages. (Ga. Code Ann., Sec. 5-401).

b. Water rights. Although common law and court decisions are the primary bases of water rights, some statute law exists. An act of 1793 (Cobb, p. 26) as amended (Ga. Laws 1855-6, p. 12) allows landowners along watercourses to ditch and embank for flood protection. (Ga. Code Ann., Sec. 85-1310).

Riparian law is acknowledged in legislation adopted in 1856 (Ga. Laws 1855-6, p. 12) in the statement that "Running water, while on land, belongs to the owner of the land, but he has no right to divert it from the usual channel, nor may he so use or adulterate it as to interfere with the enjoyment of it by the next owner." (Ga. Code Ann., Sec. 85-1301).

Legislation enacted in 1902 (Ga. Laws 1902, p. 108) assigns the ownership of the beds of nonnavigable tidewaters to the adjacent landowners and extends the ownership of the beds of navigable tidewaters to the low water mark. Navigable tidewater is defined as any tidal water used or capable of use at mean low tide by boats loaded with freight in the regular course of trade. (Ga. Code Ann., Sec. 85-1307 to 85-1309).

Legislation of 1908 (Ga. Laws 1908, p. 78) allows corporations and individuals owning land on opposite sides of nonnavigable streams to construct dams and associated works for developing water power and for other purposes. (Ga. Code Ann., Sec. 85-1306).

c. Geology. A Senate resolution adopted in 1836 (Ga. Laws 1836, p. 21) authorized the Governor to employ persons to conduct a geological survey of the State. The authority for this geological survey was abolished in 1840 by resolution of the General Assembly.

In 1874 the office of State Geologist was created (Ga. Laws 1874, p. 99). This act provided for a geological, mineralogical, and physical survey of the State to last for five years. It was not renewed in 1879.

Legislation enacted in 1889 (Ga. Laws 1889, p. 18) permanently revived the office of State Geologist and provided for a geological, mineralogical, and physical survey of the State.

The "State Reorganization Act of 1931" (Ga. Laws 1931, p. 7) placed the State Geologist in the "Department of Forestry and Geological Development".

The General Assembly in 1937 abolished the Department of Forestry and Geological Development and created a "Department of Natural Resources" with a "Division of Mines, Mining, and Geology" with duties of mapping, surveying, and reporting on the geology, topography, and mineral resources of the State (Ga. Laws 1937, p. 264). The Division was directed to make hydrographic surveys for use in mining and milling mineral deposits, utilizing water-power, and reclaiming land. The Division was instructed also to cooperate with other departments of the State and the Federal government and was authorized to participate in Federal matching-fund programs.

Legislation enacted in 1943 (Ga. Laws 1943, p. 180) abolished the Department of Natural Resources and established a "State Division of Conservation" with its "Department of Mines, Mining, and Geology" continuing the duties of the earlier Division of Mines, Mining, and Geology. (The Division of Conservation exists in name and law only as its two departments--Mines, Mining, and Geology and State Parks--operate as independent agencies.) (Ga. Code Ann., Sec. 43-117 to 43-119.4).

The Department of Mines, Mining, and Geology was authorized in 1953 (Ga. Laws 1953, p. 5) to prospect for underground public or industrial water supplies by drilling wells and making borings and soundings. Authority was given to acquire drilling sites, accept Federal aid, and contract to supply municipalities with any water discovered. (Ga. Code Ann., Sec. 43-119.1 to 43-119.4).

d. Agriculture. A "Department of Agriculture" for the State of Georgia was established in 1874 (Ga. Laws 1874, p. 5). The legislation provided for a Commissioner of Agriculture whose first duty was to prepare "a

handbook describing the geological formation of the various counties, with information as to general adaptation of the soil of the said counties for various products of the temperate zone . . ." to be distributed to farmers. Another duty was to "investigate the subject of irrigation, and what portion of this State can be most benefited thereby." (Ga. Code Ann., Chap. 5-1).

e. Health and water quality control. The 1874 Legislature created a "State Board of Health" (Ga. Laws 1874, p. 32) whose duties included advising officers of the State, county, or local governments in regard to sanitary drainage. The legislature made no appropriations for this Board after 1876, and it ceased to function.

An act of the General Assembly in 1903 (Ga. Laws 1903, p. 72) created a "State Board of Health" with duties which included investigating and reporting on water supply, sewerage, and disposal of excreta. This act did not repeal that of 1874.

The "State Reorganization Act of 1931" (Ga. Laws 1931, pp. 7, 11) abolished the Board of Health and transferred its powers to a newly created "Department of Public Health". The Act provided for formation of an "Advisory Board of Health" although no authority was given the Board to supervise the Department.

The "Board of Health" was created in 1933 (Ga. Laws 1933, p. 7) to manage and direct the Department of Public Health.

The "Georgia Water Quality Control Act" (Ga. Laws 1957, p. 629) declared that "the water resources of the State shall be utilized prudently to the maximum benefit of the people without so impairing the quality of the water resources as to jeopardize public water supplies and public health, and without interfering unreasonably with beneficial use of the water resources for recreation, fish and wildlife development, agriculture, and the industrial development of the State's natural resources and its manpower." The Act designated the State Board of Health to administer a water quality control program. A "Water Quality Council" was established to advise the State Board of Health on water quality. Permits from the Health Department were required for discharge of wastes to the waters of the State. (Repealed by Ga. Laws 1964, p. 416).

Legislation enacted in 1961 (Ga. Laws 1961, p. 109) provided for granting of State funds to counties, municipalities, or combinations to assist in the construction of water pollution control facilities. Grants were limited to projects eligible for Federal assistance and to 30% of the amount eligible under Federal law. The State Board of Health was designated to administer the program. (Repealed by Ga. Laws 1964, pp. 499, 655).

The "Georgia Health Code" (Ga. Laws 1964, p. 499) is a rewrite of the public health law of Georgia. (Ga. Code Ann., Title 88).

A chapter of the "Georgia Health Code" entitled "Water Supply Quality Control" (Ga. Laws 1964, pp. 499, 637) designates the State Board of Health as the agency to administer a water supply quality control program. It provides for establishment of quality standards for water to be distributed in supply systems, regulation of supply sources, research, certification of public water supply systems, adoption and enforcement of rules and regulations, and issuance of orders to secure reasonable operating results of water treatment facilities. It makes unlawful the construction or operation of any public water supply system without approval of the Board of Health. Procedures are provided for obtaining certification of systems and for appealing decisions of the Board to the State courts. The Board is authorized to issue emergency orders and to seek injunctions for the protection of public health. (Ga. Code Ann., Chap. 88-26).

The "Georgia Health Code" (Ga. Laws 1964, pp. 499, 655) repeals the legislation (Ga. Laws 1961, p. 109) which provided for State grants to counties and municipalities for construction of water pollution control facilities to be administered by the Board of Health. The "Georgia Water Quality Control Act" (Ga. Laws 1964, p. 416) reestablished the grants program under the administration of the Water Quality Control Board.

The "Georgia Water Quality Control Act" (Ga. Laws 1964, p. 416) repeals the "Georgia Water Quality Control Act" (Ga. Laws 1957, p. 629) and the "Georgia Water Resources Commission Act" (Ga. Laws 1957, p. 264; see below p. 19). This Act creates a "Division for Georgia Water Quality Control" within the State Department of Public Health which is under the supervision and direction of a "State Water Quality Control Board" outside the Health Department. The nine-man Water Quality Control Board is appointed by the Governor

to four-year terms with one representative of each of the following interests: (1) State Department of Public Health, (2) soil and water conservation, (3) municipal government, (4) commerce, (5) agriculture, (6) industry, (7) recreation and fish and wildlife, (8) county government, and (9) the public at large. The representative of the Health Department is to act as chairman of the Board. The Act outlines powers and duties of the Board, provides for employing an executive secretary of the Division and other employees, and transfers facilities, personnel, funds, and functions of water quality control from the Department of Public Health to the Division. The disposal of wastes into the waters of the State is regulated by requiring permits from the Board for new or modified discharges. The Board may also order the reduction or elimination of existing pollution. Procedures for appealing Board actions through the Board into the State courts are outlined. The Board is authorized to investigate violations of the Act and of its own rules and regulations, to issue emergency orders, and to seek injunctions to stop violations of the act. The Board is designated as the water pollution control agency of the State for all purposes of the Federal Water Pollution Control Act. The program of State construction grants to counties and municipalities for up to 30% of the portion eligible under Federal law of the cost of water pollution control facilities is renewed under the administration of the Water Quality Control Board. (Ga. Code Ann., Chap. 17-5).

Legislation enacted in 1966 (Ga. Laws 1966, p. 316) amends hearing procedures and requirements under the "Georgia Water Quality Control Act" enacted in 1964 (Ga. Laws 1964, p. 416).

The "Georgia Water Quality Control Act" of 1964 was amended in 1966 (Ga. Laws 1966, p. 328) to allow State construction grants to counties and municipalities for up to 100% of the cost of water pollution control facilities regardless of eligibility under Federal law.

f. Drainage. An act of the General Assembly in 1879 (Ga. Laws 1878-9, p. 171) empowered counties to establish and maintain systems of drainage and allowed them to obtain rights-of-way or easements by consent for construction of canals, ditches, dams, drains, trunks, etc., for such systems. (Ga. Code Ann., Sec. 23-2501).

Coastal counties were authorized by legislation adopted in 1893 (Ga. Laws 1893, p. 112) to condemn land for drainage systems.

All counties were authorized in 1894 (Ga. Laws 1894, p. 99) to condemn lands for drainage facilities. (Ga. Code Ann., Sec. 36-202).

An act of 1911 (Ga. Laws 1911, p. 108) provides for creation of a county court with the power to establish levee or drainage districts and have levees, drains, canals, tide gates, and pumping plants for drainage constructed or improved at the expense of benefited landowners. (Ga. Code Ann., Chap. 23-25).

g. Waterworks. The power of eminent domain was given in 1889 (Ga. Laws 1889, p. 184) to corporations, companies, partnerships, or individuals for constructing and carrying on waterworks. (Ga. Code Ann., Chap. 36-9).

h. Waterways and navigation. An act of the 1893 General Assembly (Ga. Laws 1893, p. 81) provides for the incorporation of canal companies to construct, operate, and maintain canals. Companies are forbidden to dam or divert water from any navigable stream so as to obstruct navigation on the stream. They are required to place fishways in any dams they construct and to pay damages to any injured riparian owner. Water may be supplied from a canal for any purpose, and a charge may be made for its use. Tolls may be charged for use of a canal as a waterway. (Ga. Code Ann., Chap. 17-1).

Legislation enacted in 1894 (Ga. Laws 1894, p. 71) provides for the incorporation of navigation companies and empowers them to carry freight and passengers and to own, construct, and maintain such equipment and facilities as are required in their business. (Ga. Code Ann., Chap. 17-2).

The "State Ports Authority Act" (Ga. Laws 1945, p. 464) creates a "State Ports Authority" authorized to promote, develop, construct, equip, maintain and operate terminal facilities of all kinds at any of the ports of the State. The Authority is authorized to issue revenue bonds and is given other powers. (Ga. Code Ann., Chap. 98-2).

A resolution adopted by the General Assembly in 1953 (Ga. Laws 1953, Nov. Sess., p. 67) created the "Georgia Waterways Commission" with the duty of negotiating with the proper authorities of the United States in the development of Georgia's rivers, particularly for flood control; and to

cooperate with Federal and State authorities toward the development of Georgia's rivers. (Ga. Code Ann., Chap. 17-3).

The General Assembly of 1957 authorized almost \$9 million for construction of port facilities at Savannah, Brunswick, Augusta, and Bainbridge (Ga. Laws 1957, p. 74). It authorized also a feasibility study for the Port of St. Marys.

An act of 1957 (Ga. Laws 1957, p. 644) amends the resolution creating the Georgia Waterways Commission (Ga. Laws 1953, Nov. Sess., p. 67) changing the composition of the commission and the river basins represented and authorizing the expenditure of State funds up to a total of \$10,000. (Ga. Code Ann., Sec. 17-301 and 17-303).

i. Water power. In 1897 the General Assembly enacted legislation (Ga. Laws 1897, p. 68) which authorized the power of eminent domain to be used by corporations or individuals controlling any water power or location for a steam plant and operating or constructing works for generating electricity to be supplied to the public, to municipalities, or to railroad or street car lines. (Ga. Code Ann., Chap. 36-8).

Legislation adopted in 1908 (Ga. Laws 1908, p. 78) permits corporations or individuals owning or controlling lands upon opposite sides of nonnavigable streams to construct and maintain dams for the development of water power and other purposes. Developers remain liable for damages resulting to other property owners. (Ga. Code Ann., Sec. 85-1306).

j. Game and fish. A "Department of Game and Fish" to administer the game and fish laws of the State was created by the 1911 General Assembly (Ga. Laws 1911, p. 137).

In 1924 the Department of Game and Fish was abolished and its powers were vested in a "State Game and Fish Board" (Ga. Laws 1924, p. 101). Two offices, Tidewater Commissioner and Commissioner of Game and Fish, were also established by the enacted legislation.

The "State Reorganization Act of 1931" (Ga. Laws 1931, p. 7) abolished the Board of Game and Fish and the office of Tidewater Commissioner. Provisions of this Act retained the office of Commissioner of Game and Fish and added to its powers and duties those of the abolished offices. The

Commissioner of Game and Fish became part of the new Department of Forestry and Geological Development.

An act adopted in 1937 (Ga. Laws 1937, p. 264) abolished the Department of Forestry and Geological Development and created a "Department of Natural Resources" with a "Division of Wildlife".

The Department of Natural Resources and its Division of Wildlife was abolished in 1943 and in its stead a "Department of Game and Fish" governed by a "Game and Fish Commission" was created (Ga. Laws 1943, p. 128).

The Atlantic States Marine Fisheries Compact (Ga. Laws 1943, p. 117) was enacted in 1943.

Legislation enacted in 1955 (Ga. Laws 1955, p. 483) completely revises and consolidates the laws relating to the State Game and Fish Commission and to game and fish. This legislation supersedes and repeals all previous acts on these subjects except that governing boat traffic (Ga. Laws 1952, p. 281), that prohibiting the operation of boats while intoxicated (Ga. Laws 1953, p. 55), and that exempting commercial fishermen from payment of the tax imposed on wholesale fish dealers (Ga. Laws 1953, p. 521). (Ga. Code Ann., Title 45).

The "Georgia Motorboat Numbering Act" (Ga. Laws 1960, p. 235) regulates the use of motorboats in State waters and charges the State Game and Fish Commission with its enforcement. (Ga. Code Ann., Chap. 17-6).

k. Forestry. The "Georgia State Board of Forestry" was established in 1921 (Ga. Laws 1921, p. 192) as an "investigative committee" to look into the forest resources and timber supply of the State, the use of idle land for reforestation, any benefits of existing forest laws, forest protection, and the benefits of Federal aid for forest protection and conservation.

The membership and duties of the State Board of Forestry were revised in 1925 (Ga. Laws 1925, p. 199).

The "State Reorganization Act of 1931" (Ga. Laws 1931, pp. 7, 12) abolished the State Board of Forestry and invested a "Department of Forestry and Geological Development" with its powers.

An act of the General Assembly in 1937 (Ga. Laws 1937, pp. 264, 268) abolished the Department of Forestry and Geological Development and established a "Department of Natural Resources" with a "Division of Forestry".

Legislation enacted in 1943 (Ga. Laws 1943, p. 180) abolished the Department of Natural Resources and created a "Division of Conservation" with a "Department of Forestry".

An act of the 1949 legislature (Ga. Laws 1949, p. 1079) abolished the Department of Forestry and created a "State Forestry Commission" independent of the Division of Conservation.

The "Georgia Forest Research Council" was created in 1953 (Ga. Laws 1953, Nov. Sess., p. 45) for the purpose of conducting and coordinating forestry research in the State, publicizing research results, and administering funds for forestry research. (Ga. Code Ann., Chap. 43-8).

A comprehensive revision of the laws relating to the State Forestry Commission was made in 1955 (Ga. Laws 1955, p. 309). Among the powers and duties of the Commission are to foster, improve, and encourage reforestation and to engage in research for better forestry practices. (Ga. Code Ann., Chap. 43-2).

1. Administrative reorganization and improvement. The "State Reorganization Act of 1931" (Ga. Laws 1931, p. 7) effected widespread changes in the executive branch of the State government. Among them was the grouping of forestry, geology, and game and fish under a "Department of Forestry and Geological Development" and the replacement of the Board of Health by the "Department of Public Health".

The "Board of Health" was created in 1933 (Ga. Laws 1933, p. 7) to manage the Department of Public Health.

An act of the General Assembly in 1937 (Ga. Laws 1937, p. 264) abolished the Department of Forestry and Geological Development and created a "Department of Natural Resources" with Divisions of (1) Forestry, (2) Wildlife, (3) Mines, Mining, and Geology, and (4) State Parks, Historic Sites, and Monuments.

Legislation enacted in 1943 (Ga. Laws 1943, p. 180) abolished the Department of Natural Resources and created a "Division of Conservation" with Departments of (1) Forestry, (2) Mines, Mining, and Geology, and (3) Parks, Historic Sites, and Monuments. The Governor was made Commissioner of Conservation.

The "Game and Fish Commission" was created in 1943 (Ga. Laws 1943, p. 128).

An act of the 1949 legislature (Ga. Laws 1949, p. 1079) established the "State Forestry Commission" and removed forestry from the Division of Conservation.

"The Governor's Commission on Economy and Reorganization" was established in 1959 (Ga. Laws 1959, p. 8) to:

"study, investigate, and make findings of fact concerning the establishment of efficient and economical methods and procedures for the operation of the State Government and for a more functional, business-like organization in the management and administration of the affairs of government, and the Commission shall formulate plans for the reorganization of the government in the establishment of the procedures to more efficiently and economically manage the affairs of the state, prepare drafts of suggested laws and constitutional amendments, if needed, and recommend courses of action for the consideration of the General Assembly, whereby the purposes for which this Commission is created may be effectuated."

The Commission made detailed studies of the Highway Department, the Department of Education, and the Forestry Commission and Forest Research Council. It made recommendations for administrative action and legislation on these and several minor programs and on the State's financial and personnel administration.

An act of 1963 (Ga. Laws 1963, p. 176) created the "Governor's Commission for Efficiency and Improvement in Government" to:

"conduct studies, research, investigations and surveys into the organization and operation of the several agencies, departments, boards, commissions and public authorities of this state, and prepare and submit to the Governor and the General Assembly from time to time its reports setting forth findings and recommendations with respect to the more efficient and economical operation of the state government, together with plans and suggested legislation for the reorganization of such departments and other agencies in such manner as to improve public administration."

The Commission produced nine reports on its studies of State programs. Three of the reports concerned the organization, administration, and operation of the State's highway program. The other six were on: (1) personnel management, (2) the prison system, (3) the Department of Education, (4) the Game and Fish Commission, (5) mental health programs, and (6) the Department of Mines,

Mining, and Geology. The results of these reports most directly affecting water resources management were the reorganization of the Game and Fish Department and the strengthening of its programs. The report on Mines, Mining, and Geology was released in December 1966.

m. Soil conservation. The "Soil Conservation Districts Law" (Ga. Laws 1937, p. 377) provides for the organization and powers of the State Soil Conservation Committee, the organization of soil conservation districts, the election of district supervisors and their powers, and the formulation of land use regulations in the districts. (Ga. Code Ann., Chap. 5-18 to 5-22).

The "Georgia Agricultural Conservation and Adjustment Act" (Ga. Laws 1937, p. 538) provides for the State's conformance with the Federal "Soil Conservation and Domestic Allotment Act of 1936" which calls for state programs of soil conservation and commodity production control. The Agricultural Extension Service of the University of Georgia is designated as the State agency to administer the Act. (Ga. Code Ann., Chap. 5-23).

The "Soil Conservation Districts Law" was amended in 1955 (Ga. Laws 1955, p. 257) to give the State Soil Conservation Committee responsibility for implementing the "Federal Watershed Protection and Flood Prevention Act of 1954". (Ga. Code Ann., Sec. 5-1810).

The power of eminent domain was extended to soil conservation districts in 1960 (Ga. Laws 1960, p. 973) (Ga. Code Ann., Sec. 5-2201).

In 1962 the name of the State Soil Conservation Committee was changed by adding "Water" (Ga. Laws 1962, p. 116). The Committee is now the "State Soil and Water Conservation Committee" and the districts are "Soil and Water Conservation Districts". (Ga. Code Ann., Chap. 5-18 to 5-22).

Legislation enacted in 1964 (Ga. Laws 1964, p. 234) allows counties to acquire easements, land, property rights, and franchises by condemnation for construction of small watershed projects, watershed improvement and protection works, or flood control works under any Georgia or Federal Act. Provisions of the Act further empowered the counties to condemn property for recreational facilities, including ingress and egress, as associated parts of watershed projects (Ga. Code Ann., Chap. 36-14).

n. Parks. A "Division of State Parks, Historic Sites, and Monuments" was created within a "Department of Natural Resources" by legislation enacted in 1937 (Ga. Laws 1937, p. 264).

An act of the 1943 General Assembly (Ga. Laws 1943, p. 180) abolished the Department of Natural Resources and created a "Division of Conservation" to include a "Department of State Parks, Historic Sites, and Monuments". (The Division of Conservation exists in name and law only as its two departments--Mines, Mining, and Geology and State Parks--operate as independent agencies.) (Ga. Code Ann., Sec. 43-120 to 43-134).

In 1956 the name of the Department of State Parks, Historic Sites, and Monuments was changed to the "Department of State Parks" (Ga. Laws 1956, p. 793).

o. Planning and development. A "State Planning Board" was established in 1937 (Ga. Laws 1937, p. 291). Legislation establishing the Board provided for appointment of its Chairman and members, defined its functions and duties, and provided for the payment of a portion of its expenses by the Highway Department. Duties of the Board included making surveys and maps of land use and classification for such purposes as watershed protection, water supply, drainage, and sewerage; studying physical, social, and economic factors in the development of natural resources in order to plan for water supply reservations, in order to develop longterm policies in relation to land and water utilization, conservation, flood control, watershed protection, and for other important purposes; and encouraging and coordinating planning by county, municipal, and regional groups.

A "State Agricultural and Industrial Development Board" was established in 1943 as a successor to the State Planning Board (Ga. Laws 1943, p. 113).

The general enabling act of 1946 (Ga. Laws 1946, p. 191) is the first general grant of authority to municipalities to adopt and administer zoning regulations and to undertake municipal planning. Previously, these powers had been included in city charters. This act requires that zoning regulations conform with a comprehensive plan administered by a municipal planning board. Joint city-county planning boards may be established. Cities which had acquired powers of planning and zoning before January 31, 1946, had the option of continuing under their old powers or adopting this act. (Ga. Code Ann., Chap. 69-8).

An act of the 1949 General Assembly (Ga. Laws 1949, p. 249) abolished the Agricultural and Industrial Development Board and created a "Department of Commerce" which had general duties in promoting the commerce, industry, and agriculture of the State.

An act of 1957 (Ga. Laws 1957, p. 420) is a second general grant of planning and zoning authority to municipalities. For the first time it grants this authority generally to counties. This act may be adopted by any municipality with previous authority under its charter or the General Enabling Act of 1946, and it must be used by any county or municipality assuming such powers after 1957. Under this act the duties of planning commissions include preparation of a master plan of development, recommendation of a zoning ordinance or resolution and map, preparation and administration of subdivision regulations, and preparation and recommendation of an official map of existing and proposed streets, public open spaces, and public building sites. (Ga. Code Ann., Chap. 69-12).

A "State Planning Commission" was created in 1957 (Ga. Laws 1957, p. 446) within the Department of Commerce. It was given authority to prepare a general plan of development for the State, to render assistance to other governmental groups in planning development, and to conduct a public information program.

In 1959 the State Planning Commission was abolished and its functions were transferred to the Board of Commissioners of the Department of Commerce (Ga. Laws 1959, p. 53). (Ga. Code Ann., Sec. 40-2122 to 40-2126).

The Department of Commerce was abolished in 1962 and a "Department of Industry and Trade" was created as its successor (Ga. Laws 1962, p. 694). The act contains a rewrite of the pertinent laws. (Ga. Code Ann., Chap. 40-21).

The "Industrial Development Authorities Law" (Ga. Laws 1963, p. 531) provides for the establishment of public authorities by counties and municipalities to finance, build, lease, and sell industrial buildings and supporting facilities which include water supply, drainage, sewerage, and waterways. The directors of the authorities are to be appointed by the governing bodies of the counties and municipalities. The authorities are empowered to issue revenue bonds for carrying out their purposes. (Ga. Code Ann., Chap. 69-15).

The "Area Redevelopment Finance Act" (Ga. Laws 1964, p. 728) allows the State to take advantage of the Federal "Area Redevelopment Act" for

assisting areas of chronic unemployment. (Ga. Code Ann., Sec. 40-2127 to 40-2131).

p. Water resources planning and research. A "Georgia Water Law Revision Commission" was created in 1955 (Ga. Laws 1955, p. 407) to make studies and recommend legislation to the General Assembly on water pollution, conservation, and use for irrigation, industrial, domestic, and governmental purposes.

The "Georgia Water Resources Commission Act" (Ga. Laws 1957, p. 264) resulted from the work of the Georgia Water Law Revision Commission which it abolished. The Act stated that the water resources of the State should be used to the maximum benefit of the people. To achieve this the State government was to provide study facilities and a procedure for determining the optimum usages of the waters of the State. The "Georgia Water Resources Commission" consisting of the members of the "Water Quality Council" (see below) was created to carry out the functions of the Act. (Repealed, Ga. Laws 1964, p. 416).

The "Georgia Water Quality Control Act" (Ga. Laws 1957, p. 629) also resulted from the work of the Georgia Water Law Revision Commission. It created a "Water Quality Council" of members both ex-officio and representing special interests to advise the Board of Health on water pollution matters. (Repealed, Ga. Laws 1964, p. 416).

The "Georgia Water Quality Control Act" (Ga. Laws 1964, p. 416) repeals the "Georgia Water Resources Commission Act" (Ga. Laws 1957, p. 264) and the "Georgia Water Quality Control Act of 1957" (Ga. Laws 1957, p. 629).

An act of the 1965 General Assembly (Ga. Laws 1965, p. 252) designated the Georgia Institute of Technology as the agency of the State to establish and operate a "Water Resources Center" for the purposes of conducting research and training in relation to water. The Water Resources Center is authorized to administer funds obtained under the Water Resources Research Act, Public Law 88-379, from the Federal government and other sources and to enter into contracts and agreements with other colleges, the Federal government, political subdivisions of the State, private firms, etc., for participation in the work of the Center. (Ga. Code Ann., Chap. 17-4).

3. Case law

Court actions on water law cited in this report are the cases usually cited in papers on water law and rights in Georgia. Because litigation over water rights in the State has been limited, the courts have not considered many significant points of water law. This lack of litigation undoubtedly reflects a general abundance of water in Georgia.

a. Hendrick v. Cook, 4 Ga. 241 (1847). This case may be the earliest judicial consideration of riparian rights in Georgia. It arose over the flooding of a mill shoal by a downstream dam. The court held that damages could be recovered for loss of the value of the shoal and stated this rule: "Each riparian proprietor is entitled to a reasonable use of the water, for domestic, agricultural, and manufacturing purposes; provided, that in making such use, he does not work a material injury to the other proprietors." The court considered the origins of the doctrine of riparian rights and expressly rejected the theory of prior appropriation.

b. Price v. High Shoals Manufacturing Co., 132 Ga. 246, 64 S.E. 87 (1909). A lower riparian grist mill operator sued an upper riparian textile manufacturer alleging that the stream flow to which he was entitled was diminished by evaporation and absorption of water from the textile manufacturer's mill pond. The court found that though a reasonable use could be made of the stream a jury must decide what use is reasonable. It stated the Georgia rule of riparian rights as follows:

"Under a proper construction of the Civil Code, Secs. 3057, 3802, 3879, every riparian owner is entitled to a reasonable use of the water in the stream. If the general rule that each riparian owner could not in any way interrupt or diminish the flow of the stream were strictly followed, the water would be of but little practical use to any proprietor, and the enforcement of the rule would deny, rather than grant, the use thereof. Every riparian owner is entitled to a reasonable use of the water. Every such proprietor is also entitled to have the stream pass over his land according to its natural flow, subject to such disturbances, interruptions, and diminutions as may be necessary and unavoidable on account of the reasonable and proper use of it by other riparian proprietors. Riparian proprietors have a common right in the waters of the stream, and the necessities of

the business of one cannot be the standard of the rights of another, but each is entitled to a reasonable use of the water with respect to the rights of others. What is a reasonable use is a question for the jury in view of all the facts in the case, taking into consideration the nature and use of the machinery, the quantity of water used in its operation, the use to which the stream can be applied, the velocity of its current, the character and size of the watercourse, and the varying circumstances of each case."

c. Pool v. Lewis, 41 Ga. 162 (1870). The right of a riparian owner to the reasonable use of a stream for powering his mill includes the right to detain the flow of the stream for a reasonable time, but he must return the diverted flow to the natural channel before it passes to the land of the next lower riparian owner.

d. Robertson v. Arnold, 182 Ga. 664, 186 S.E. 806 (1936). The court held that a riparian owner could bring an action against an upstream diversion even though he suffered no material injury because his failure to do so might lead to the acquisition of a prescriptive right by the divertor. The court rejected the so-called "reasonable use doctrine" which holds that a prescriptive right cannot begin to run until the lower owner is in fact using water and is injured in fact by the upper diversion.

e. Hendrix v. Roberts Marble Co., 175 Ga. 389, 165 S.E. 223 (1932). A riparian owner conveyed his riparian rights to a nonriparian owner for use on nonriparian lands. A downstream riparian owner brought action against this nonriparian use and against the associated pollution of the stream with marble grindings. The court held that a lower riparian owner might enjoin a nonriparian use because it infringes on his riparian rights. It found that the mere fact of pollution by marble grindings was insufficient for the lower owner to secure an action.

f. City of Elberton v. Hobbs, 121 Ga. 749, 49 S.E. 779 (1905). Defendant city pumped water for municipal use from a stream on a tract of land it had purchased several miles away from its corporate limits. Most of the diverted water was returned to the stream so that its flow was reduced very slightly. The court held that a lower riparian owner could bring an injunction to stop the city's use of this water on nonriparian land. The

city could obtain the right to use this water through its power of eminent domain.

g. Davis v. Cobb, 61 Ga. App. 712, 7 S.E. 2d 324 (1940).

Road construction by the county blocked a spring which fed a stream flowing over the plaintiff's land. The court held that this was an artificial obstruction placed on the bed of a watercourse which interfered with the right of a riparian owner to enjoy the natural flow of the stream. Such a right of property could not be taken, even by the State for a public purpose, without just compensation. Plaintiff was entitled to damages equal to the difference between the value of his land before and after the stream ceased to flow.

h. Seaboard Air Line Ry. v. Sikes, 4 Ga. App. 7, 60 S.E. 868 (1908). "The owner of land is entitled to the free and exclusive enjoyment of all watercourses not navigable flowing over his land; . . ."

i. Cole v. Bradford, 52 Ga. App. 854, 184 S.E. 901 (1936). The rights of a riparian owner to the natural flow of a stream include the right to have it flow away from his land. A riparian owner is not obligated to remove such obstructions in a stream as naturally accumulate, but he must grant access to those who do wish the stream cleared though he is not liable for any cost himself.

j. Roughton v. Thiele Kaolin Co., 209 Ga. 577, 74 S.E. 2d 844 (1953). "An upper riparian owner cannot adulterate and pollute the water of a non-navigable stream so as to render it unfit for use by a lower owner, or clog the bed of the stream so as to cause its water to overflow, and thereby impair the value of the lower owner's property, without being liable to him in damages for such unlawful acts."

k. Bell Industries, Inc. v. Jones, 220 Ga. 684, 141 S.E. 533 (1965). The "Water Quality Control Act" (Ga. Laws 1964, p. 416) does not undertake to alter general rules of law in regard to private nuisances and will neither aid nor hinder a private individual in action to enjoin a nuisance.

l. Costley v. Long, 112 Ga. App. 758 (1965). The court ruled that a landowner may divert or change the course of a stream flowing through his

land so long as he returns it to its natural channel before it leaves his land and provided the diversion causes no material injury to any other landowners.

4. Attorney General's opinions

Opinions of the Attorneys General of the State of Georgia, published since the last Georgia Code in 1933 and which appeared significant to water law, are listed below.

Chemicals may be used in the treatment of a water supply only upon issuance of a permit by the State Board of Health. The State Board of Health is vested with the power to establish regulations controlling public water supplies (Ga. Code, Sec. 17-504(3)), and the Board under this authority has adopted a rule that chemicals may be used in treatment of a public water supply only with a permit issued by the Board. (1960-61 Op. Atty. Gen., p. 417).

A private pond under game and fish law is defined by statute as a water body, surrounded by lands under one title, from which fish cannot proceed upstream or downstream to the lands of another. (1957 Op. Atty. Gen., p. 146).

Flooding the lands of another without license by erecting a dam is a trespass. A parol license to flood lands given by the owner of such lands operates as an easement when it is acted on by spending money in the construction of a dam. (1954-56 Op. Atty. Gen., p. 555).

A constitutional amendment is required to allow a county or municipal corporation to levy a tax for industrial development. (1954-56 Op. Atty. Gen., p. 585).

A nonprofit organization may legally construct dams in nonnavigable streams subject to the usual conditions--owning land on both sides of the stream, gaining consent of the affected riparian owners, and providing fish passageways. (1952-53 Op. Atty. Gen., p. 328).

The authority of the State Game and Fish Commission to adopt rules and regulations controlling the waters of the State extends to the three-mile limit along the coast. (1950-51 Op. Atty. Gen., p. 87).

The police power of the State, including the authority of the Board of Health, does not apply to Federal lands unless the State specifically retained jurisdiction when ceding the lands to the Federal government. Thus

the impoundment regulations of the Board of Health would not generally apply to Federal lands. (1939-41 Op. Atty. Gen., p. 497).

A pond formed by the overflow of a river and lying entirely within the boundaries of a single ownership is a private pond under game and fish law. (1933-34 Op. Atty. Gen., p. 217).

C. Water rights

1. Doctrine

Georgia's basic water rights doctrine for streams is that of riparian rights, but the strict doctrine has been modified, and other doctrines have been required for other classifications of water. In 1847 (Hendrick v. Cook, above, p. 20) the Georgia Supreme Court rejected any doctrine of prior appropriation and stated that reasonable riparian uses were allowable so long as no material injury was done to other riparian owners. "Running water, while on land, belongs to the owner of the land, but he has no right to divert it from the usual channel, nor may he so use or adulterate it as to interfere with the enjoyment of it by the next owner" (Ga. Laws 1855-6, p. 12; Ga. Code Ann., Sec. 85-1301). "The owner of land through which nonnavigable watercourses may flow is entitled to have the water in such streams come to his land in its natural and usual flow, subject only to such detention or diminution as may be caused by a reasonable use of it by other riparian proprietors; and the diverting of the stream, wholly or in part, from the same, or the obstructing thereof so as to impede its course or cause it to overflow or injure his land, or any right appurtenant thereto, or the pollution thereof so as to lessen its value to him, shall be a trespass upon his property" (Ga. Code Ann., Sec. 105-1407). In 1909 the Court (Price v. High Shoals Manufacturing, above, p. 20) restated the reasonable use theory in some detail establishing that the reasonableness of a use is a question to be settled by a jury considering the facts of the specific case. (The Georgia reasonable use theory is distinct from the "reasonable use doctrine" applied in some northeastern states which in effect, keeps a prescriptive right from beginning to run until a lower riparian owner is actually using water and is being injured by an upper user. In Georgia a lower riparian owner may take action against an upper user even though the lower owner is not using the stream.)

2. Surface water (streams, diffused surface water, lakes, and ponds)

The rights of landowners riparian to streams vary according to the legal classification of the stream. "A navigable stream is one capable of bearing upon its bosom, either for the whole or a part of the year, boats loaded with freight in the regular course of trade. The mere rafting of timber or transporting of wood in small boats shall not make a stream navigable" (Ga. Code Ann., Sec. 85-1303). This definition of a navigable stream under Georgia law is not the same as that under Federal law. Should any conflict arise involving a Federal question of law, the Federal definition would overrule the State definition. The ownership of nonnavigable streams is an exclusive property right of the riparian landowners (Ga. Code Ann., Sec. 85-1305). The rights of such riparian landowners cover the beds of nonnavigable streams to the thread of the main current (Ga. Code Ann., Sec. 85-1302). The rights of landowners riparian to navigable streams extend to the low water mark in the bed of the stream (Ga. Code Ann., Sec. 85-1304). The rights of landowners riparian to tidewaters include the exclusive right to gather shellfish from the beds (Ga. Code Ann., Sec. 85-1309). Rights along nonnavigable tidewaters extend to the center of the channel (Ga. Code Ann., Sec. 85-1307), and those along navigable tidewaters to the low water mark, but in neither case shall these riparian rights infringe on the free use of tidewaters for navigation (Ga. Code Ann., Sec. 85-1309).

The Roman or Civil law doctrine concerning drainage of diffused surface water has been adopted in Georgia. It has been stated as follows:

"... one landed proprietor has no right to concentrate and collect it [surface water], and thus cause it to be discharged upon the land of a lower proprietor in greater quantities at a particular locality, or in a manner different from that in which the water would be received by the lower estate if it simply ran down upon it from the upper by the law of gravitation."

(*Mayor of Albany v. Sikes*, 94 Ga. 30, 20 S.E. 257)

The title to the bed of a nonnavigable lake or pond extends only to the normal low water mark at the time of the execution of the deed unless some other specific provision was made (*Boardman v. Scott*, 102 Ga. 404, 30 S.E. 982). Probably each littoral owner has an equal right to use of

the entire surface of the lake or pond for himself and his guests so long as he does not interfere with use by other littoral owners.

A private pond has been defined as "a body of water being wholly on or within the lands of one title, where the fish cannot go upstream or downstream or to the lands of another" (Ga. Code Ann., Sec. 45-102(e)). The owner of the bed of a private pond has the exclusive right to use the water of the pond and to exclude all others, even littoral owners.

3. Groundwater

Groundwater is treated under separate rules if it is classed as an underground stream or as percolating waters. It is assumed to be percolating unless evidence of a stream in a definable channel is convincing. The rule applied to an underground stream is the same as the riparian reasonable use rule applied to nonnavigable surface streams. For percolating waters the Common Law rule that gives a landowner exclusive possession of everything beneath the land to the center of the earth has been applied. Thus whatever the overlying landowner can capture is his without regard to the effect on other landowners. The single exception seems to be that water must not be withdrawn with the malicious intent of injuring another (St. Amand v. Lehman, 120 Ga. 253, 47 S.E. 949).

4. Access to lakes and streams

Georgia law has made no specific provision for public access to lakes or streams. The rights of landowners adjacent to navigable streams extend only to the low water mark in the bed of the stream. Therefore the main channel of a navigable stream is public property; but since the public may not legally trespass on privately owned shoreline, public access is permitted only from public rights-of-way or lands. There are no public access rights in nonnavigable streams where both banks are privately owned.

Georgia courts have adopted the rule that title to land bordered by a nonnavigable lake extends to normal low water mark at the date of the execution of the deed (Boardman v. Scott, 102 Ga. 404, 30 S.E. 982).

5. Diversion between basins

"Running water while on land, belongs to the owner of the land, but he has no right to divert it from the usual channel, nor may he so use

or adulterate it as to interfere with the enjoyment of it by the next owner" (Ga. Laws 1855-6, p. 12). The courts have sustained complaints of lower riparian owners against nonriparian upstream diversions (City of Elberton v. Hobbs, above, p. 21). Lower owners' rights might be obtained by license, purchase or condemnation.

6. Eminent domain

The Georgia Constitution, Art. 4, Sec. 2, Par. 1, contains the following paragraph concerning the right of eminent domain: "The exercise of the right of eminent domain shall never be abridged, nor so construed as to prevent the General Assembly from taking property and franchises, and subjecting them to public use."

The right of the State to condemn land for a public purpose is absolute in time of war and may be granted by the legislature in time of peace. The power of the legislature may be exercised directly or through officers of the State, corporate bodies, or individual enterprise. Just compensation to the owner is normally required for interference with his exclusive right. A statutory procedure is provided which applies to, "condemnation by cities, counties, railroads, telegraph, canal, mining, and waterworks companies, drainage by counties, tramroads, lighthouses, and beacon constructions, and to all persons or corporations having the privilege of exercising the right of eminent domain". It also applies to transmission and distribution lines for natural and artificial gas and petroleum products. Condemnation is authorized for the following special purposes: telegraph companies, power companies, waterworks companies, roads, pipe line corporations, and by counties to complete small watershed projects under any State or Federal act including easements for connected recreational facilities including ingress and egress. (Ga. Code Ann., Chap. 36-1 to 36-14).

The power of eminent domain has been granted to soil and water conservation districts to obtain easements and rights-of-way for constructing conservation works (Ga. Laws 1960, p. 973).

D. Regulatory authority

1. Permits or approvals required

a. Drilling or abandoning wells. The State does not regulate well drillers or the drilling or abandoning of wells except oil wells; however,

any well which is part of a water system supplying domestic use, human consumption, or food processing industry must be approved as part of the water supply system by the Georgia Department of Public Health.

b. Impoundments. The Georgia Department of Public Health requires that preliminary permits be obtained for all proposed impoundments larger than one-tenth of an acre for the purpose of mosquito control. Final permits are issued when certain mosquito control requirements have been followed.

The State in no way regulates the construction or maintenance of dams in order to secure safety in their construction and operation.

c. Channel encroachments. The State Game and Fish Commission may require the installation of fish ladders in dams on fresh-water streams. (Ga. Code Ann., Sec. 45-119).

d. Development in flood plains. Local governmental units may adopt zoning regulations for several purposes which include, "securing safety from fire, flood, erosion and other dangers". (Ga. Code Ann., Sec. 69-802 and 69-1207).

e. Discharge of wastes. The Georgia Water Quality Control Board requires permits for the construction, installation, or modification of any system which discharges sewage or industrial or other waste to the waters of the State. (Rules No. 1 and 2, State Water Quality Control Board, March 13, 1965).

f. Construction of public water supply. The Georgia Department of Public Health requires that all plans and specifications for construction of public water supplies receive their approval. (Water Quality Regulation No. 1, Georgia State Board of Health, Oct. 17, 1957).

2. Water quality

a. Waste treatment. The regulations of the Georgia Water Quality Control Board require that "all sewage shall receive at least complete secondary treatment as provided by conventional biological treatment processes before discharging into the waters of the State. Industrial wastes and other wastes shall receive such treatment or other corrective action

so as to render the waste treatment equivalent to that received by complete secondary sewage treatment, before discharge into the waters of the State. Notwithstanding the above, a higher degree of sewage, industrial wastes or other wastes treatment may be required as deemed necessary by the Board to eliminate or prevent pollution of the waters of the State." (Rule No. 1, State Water Quality Control Board, March 13, 1965, Sec. 1.04(a)).

b. Flow regulation. The State has not adopted any rule to govern regulation of stream flow for water quality control.

Note: Under the provisions of the "Georgia Administrative Procedure Act" (Ga. Laws 1964, p. 338) which became effective in 1965, the Secretary of State of Georgia is required to compile and publish the rules and regulations of the administrative agencies of Georgia. Those regulations which are not published in this compilation lose any force of law. Five of the six projected volumes of regulations were published in February 1967 as Official Compilation Rules and Regulations of the State of Georgia by the Secretary of State. The volume containing regulations of the Comptroller General's Office which deal primarily with insurance remained to be published. A monthly compilation of new regulations has been published since 1965.

II. ADMINISTRATIVE STRUCTURE

A. Interstate

1. Resources Advisory Board, Southeast River Basins

The Resources Advisory Board, an interstate agency, was organized in March 1964 by Georgia, Florida, and Alabama. Functions of the Board are to provide information on the need for conservation, development, and use of the land and water resources in the Southeast; to encourage cooperation among Federal, State, and local agencies in planning and developing water resources; and to encourage implementation of the comprehensive plan for land and water resources development recommended by the United States Study Commission, Southeast River Basins. The Board, headquartered in Atlanta, consists of four members, one member from each participating state appointed by its governor plus a chairman from the Southeast River Basins area selected by the state members. A small staff carries on the activities of the Board.

Georgia's participation in activities of the Board is authorized by a resolution of the General Assembly (Ga. Laws 1964, p. 244). The resolution provides for financial support and authorizes the Governor to appoint a representative to the Board. The representative is to serve at the Governor's pleasure with no compensation other than for actual expenses. Old age and survivors insurance coverage to employees of the Board is provided by an amendment to the resolution (Ga. Laws 1965, p. 508).

2. Southeast Basins Inter-Agency Committee

The Southeast Basins Inter-Agency Committee was organized in October 1964 pursuant to the provisions of a charter adopted on December 19, 1963 by the Inter-Agency Committee on Water Resources. The charter was issued in consonance with the Inter-Agency Agreement on the Coordination of Water and Related Land Resources, approved by the President on May 26, 1954.

The responsibility of the Committee is to establish means and procedures to promote coordination of the water and related land resource development and activities in the Southeast River Basins by the States, Federal agencies, and private and local interests; to promote resolution of problems at the regional level; and to suggest to the States or to the Inter-Agency Committee on Water Resources changes in law or policy which would promote

coordination, or resolution of problems. (The Inter-Agency Committee on Water Resources was abolished by Executive Order dated April 10, 1966 and the Southeast Basins Committee now is under the aegis of the Water Resources Council established by the Water Resources Planning Act).

The Committee is comprised of eleven members: 3 states--Alabama, Florida, and Georgia; the interstate Resources Advisory Board; and 7 Federal agencies--Departments of Agriculture, the Army, Commerce, the Interior, Health, Education and Welfare, and Labor; and the Federal Power Commission.

The Committee has established three standing subcommittees--the Subcommittee on Review and Coordination, the Subcommittee on Program Information and Scheduling, and the Subcommittee on Basic Data and Research. These subcommittees are the action element of the Committee through which its coordination activities are largely effected.

3. The Appalachian Regional Commission

The Governor of Georgia is one of the twelve state members of the Appalachian Regional Commission established under the Federal Appalachian Regional Development Act of 1965 (Public Law 89-4). The Act reads in part "to provide public works and economic development programs and the planning and coordination needed to assist in development of the Appalachian region" through state-Federal programs.

Thirty-five counties in North Georgia are included by the Act in the Appalachian region.

The Appalachian Planning Section in the Planning Division of the Department of Industry and Trade administers Georgia's part in programs under the Act.

4. Atlantic States Marine Fisheries Commission

The Atlantic States Marine Fisheries Commission was formed by compact among 14 Atlantic coast states to promote and coordinate the development of marine fisheries. It is an advisory body supported by contributions from each member state. The U. S. Fish and Wildlife Service provides it with technical advice and research facilities.

AD-A041 399

CORPS OF ENGINEERS CINCINNATI OHIO
DEVELOPMENT OF WATER RESOURCES IN APPALACHIA. MAIN REPORT. PART--ETC(U)

F/G 8/6

JUN 70

UNCLASSIFIED

5 OF 7
AD
A041 399

NL



ORGANIZATION OF THE STATE GOVERNMENT OF GEORGIA

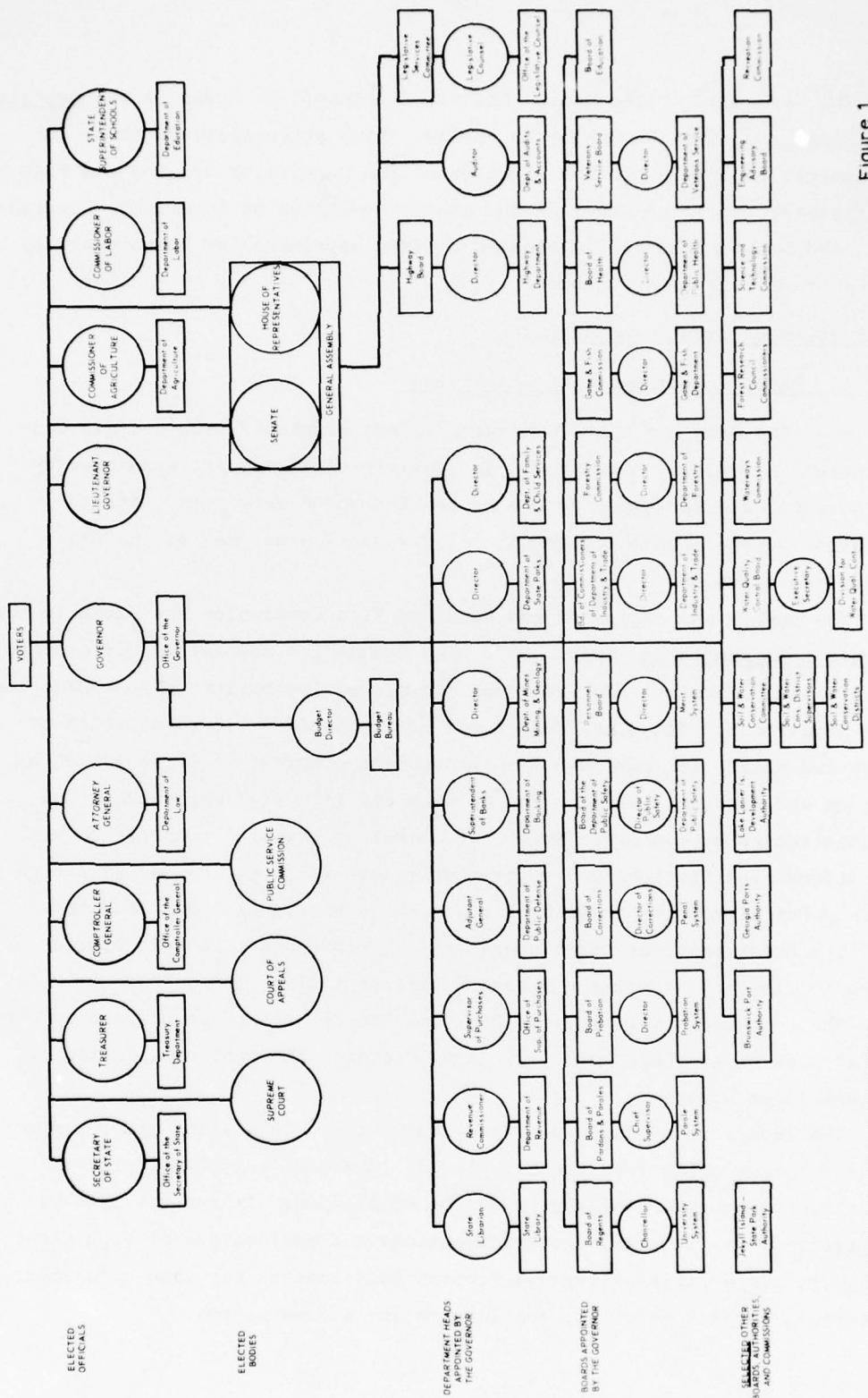


Figure 1

This chart does not include organizations created by the 1967 General Assembly which are described in Appendix A.

The "Atlantic States Marine Fisheries Compact" is found in the Georgia Code Annotated, Section 45-123 to 45-129. Each state appoints three commissioners; Georgia's are the Director of the Department of Game and Fish, a legislator who is a member of the State Commission on Interstate Cooperation, and an informed and interested citizen appointed for three years by the Governor with Senate approval.

B. State departments and agencies

1. Georgia Game and Fish Commission

The Game and Fish Commission is established by the Georgia Constitution, Article 5, Section 4. It consists of 11 members appointed by the Governor and confirmed by the Senate for seven-year terms, one to represent each of the 10 congressional districts plus one for the six coastal counties.

The powers and duties of the Game and Fish Commission are given in the Georgia Code Annotated, Chap. 45-1. The Commission appoints a director to serve as its executive secretary and administrative officer of the Game and Fish Department. Its other duties and powers include (1) acquisition of lands and waters for game and fish management programs, (2) regulation of hunting and fishing, (3) stocking of game and fish, (4) enforcement and administration of the State Motorboat Numbering Act, (5) cooperation with educational institutions and governmental agencies, and (6) insuring free passage for fish in fresh water streams by requiring fishways in dams.

The Department has three operating divisions under the director as shown in Figure 2. Duties of these divisions follow.

The Administrative Services Division handles the personnel and accounting affairs of the Department. It also operates the hunting and fishing license sales program.

The Program Planning and Evaluation Division is a staff group responsible for developing long range goals and immediate objectives of the Department's programs for review by the Commission. In support of these responsibilities it makes field inspections and evaluations of Department programs. This Division employs Program Coordinators for game management, fisheries, special services, and information and education.

ORGANIZATION OF THE GAME AND FISH COMMISSION

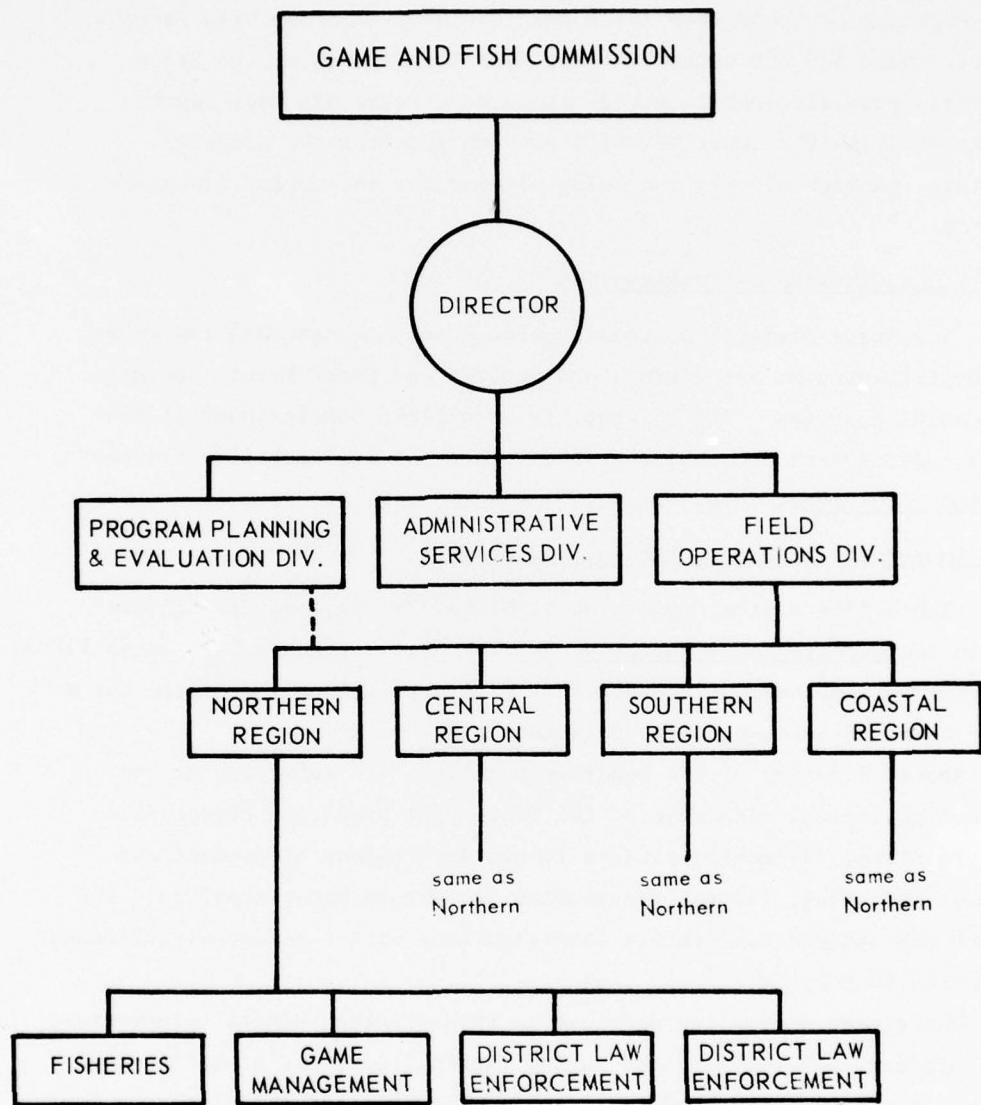


Figure 2

The Field Operations Division carries on action programs of game management, fisheries management, research, and law enforcement in each of four regions of the State. It is by far the largest division employing uniformed rangers, biologists, and others. Its largest program is that of law enforcement. From eight fish hatcheries it provides fingerlings for free stocking of about 1000 lakes per year and, together with Federal hatcheries, about 500,000 catchable trout for the streams of the State. A new program providing public access areas on streams has been begun in cooperation with the counties which provide land for the projects. Its greatest research efforts are being planned for the marine fisheries of the State.

2. State Division of Conservation

The State Division of Conservation exists in name and law only; its two departments, Mines, Mining, and Geology and State Parks, operate as independent agencies. The Governor is ex-officio Commissioner of Conservation. Its powers and duties are only those of its constituent departments. (Ga. Code Ann., Chap. 43-1).

3. Department of Mines, Mining, and Geology

The duties of the Department of Mines, Mining, and Geology are defined in the Georgia Code Annotated, Section 43-117 through Section 43-119.4. Its director is appointed by the Governor with approval of the Senate for a four-year term. He must be a graduate geologist.

The specific duties of the Department include (1) surveying of the mineral and geological resources of the State, (2) preparing topographic maps of the State, (3) making studies to aid development of mineral and water power resources, and (4) prospecting for ground water supplies. The Department may conduct cooperative investigations with the Federal government on a matching fund basis.

The Department offers its services in investigating mineral properties, assaying ore and rock samples, and making chemical analyses of waters for industries, municipalities, and individuals. It collects and disperses information on the mineral resources of the State. An intensive exploration for phosphate deposits was begun in 1965 and continues.

ORGANIZATION OF THE DEPARTMENT OF STATE PARKS

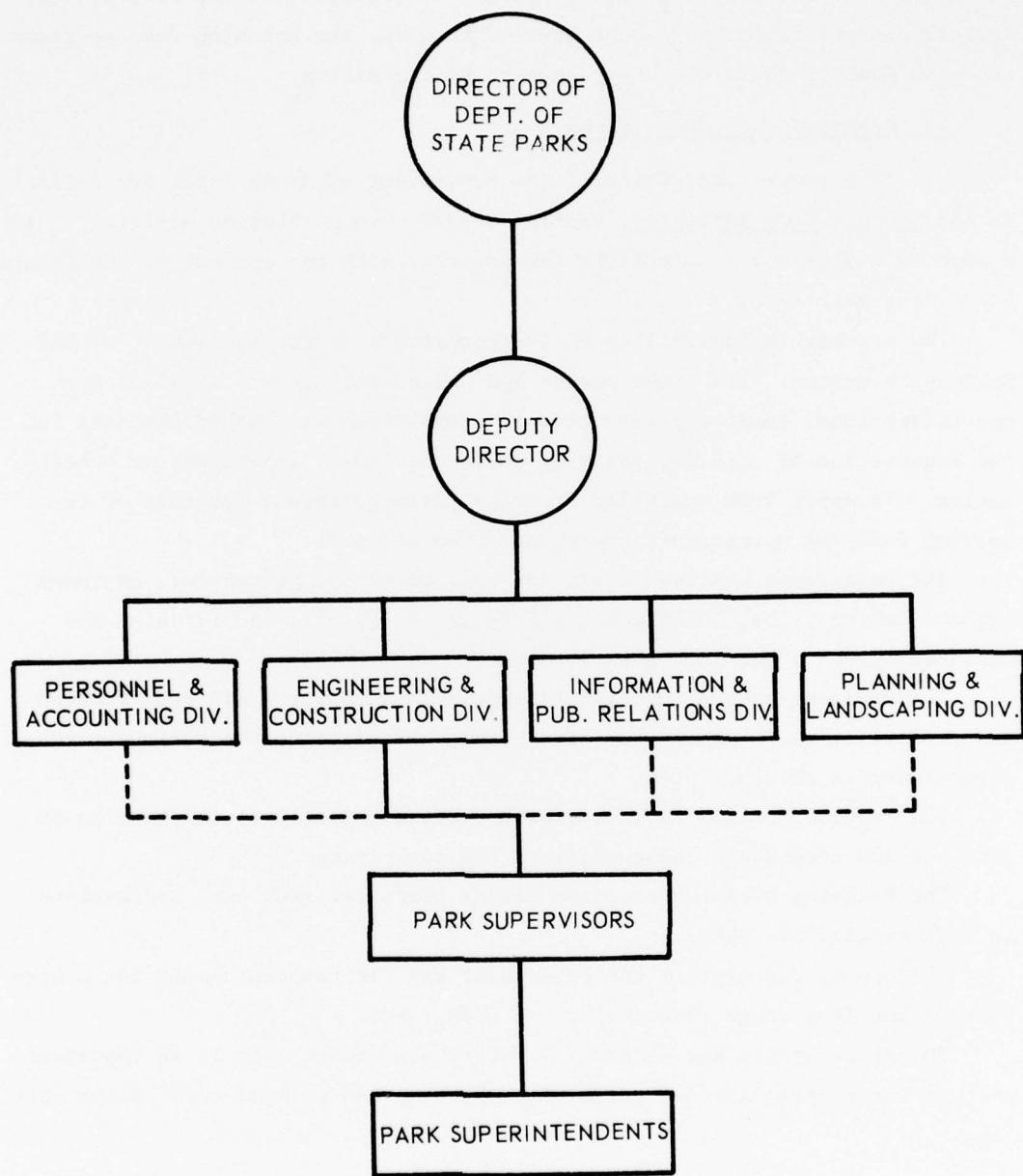


Figure 3

Other activities of the Department are carried on through matching-fund programs with the U. S. Geological Survey for surface and ground water studies and topographic mapping. Special water supply studies requested by several Georgia cities have been carried on under the matching-fund programs with the State's share of funds supplied by the cities.

4. Department of State Parks

The powers and duties of the Department of State Parks are defined in the Georgia Code Annotated, Section 43-120 through Section 43-134. It is headed by a director appointed by the Governor with the consent of the Senate for a four-year term.

The primary responsibility of the Department is the management of the State park system. Its other powers and duties include the study of park and recreational needs and resources in cooperation with other agencies and the acquisition of land for parks by purchase, lease, agreement, or condemnation. Receipts from operation of State parks go into a rotating or revolving fund for maintenance and acquisition of lands.

The Department has four divisions--Personnel and Accounting, Engineering and Construction, Information and Public Relations, and Planning and Landscaping--as shown in Figure 3.

The Engineering and Construction Division supervises all construction and repairs at the State parks. It directs and supports the various park supervisors in this activity.

The Information and Public Relations Division collects information on park use and attendance and publicizes the park system.

The Planning Division prepares master plans for each park and assists in implementing the plans.

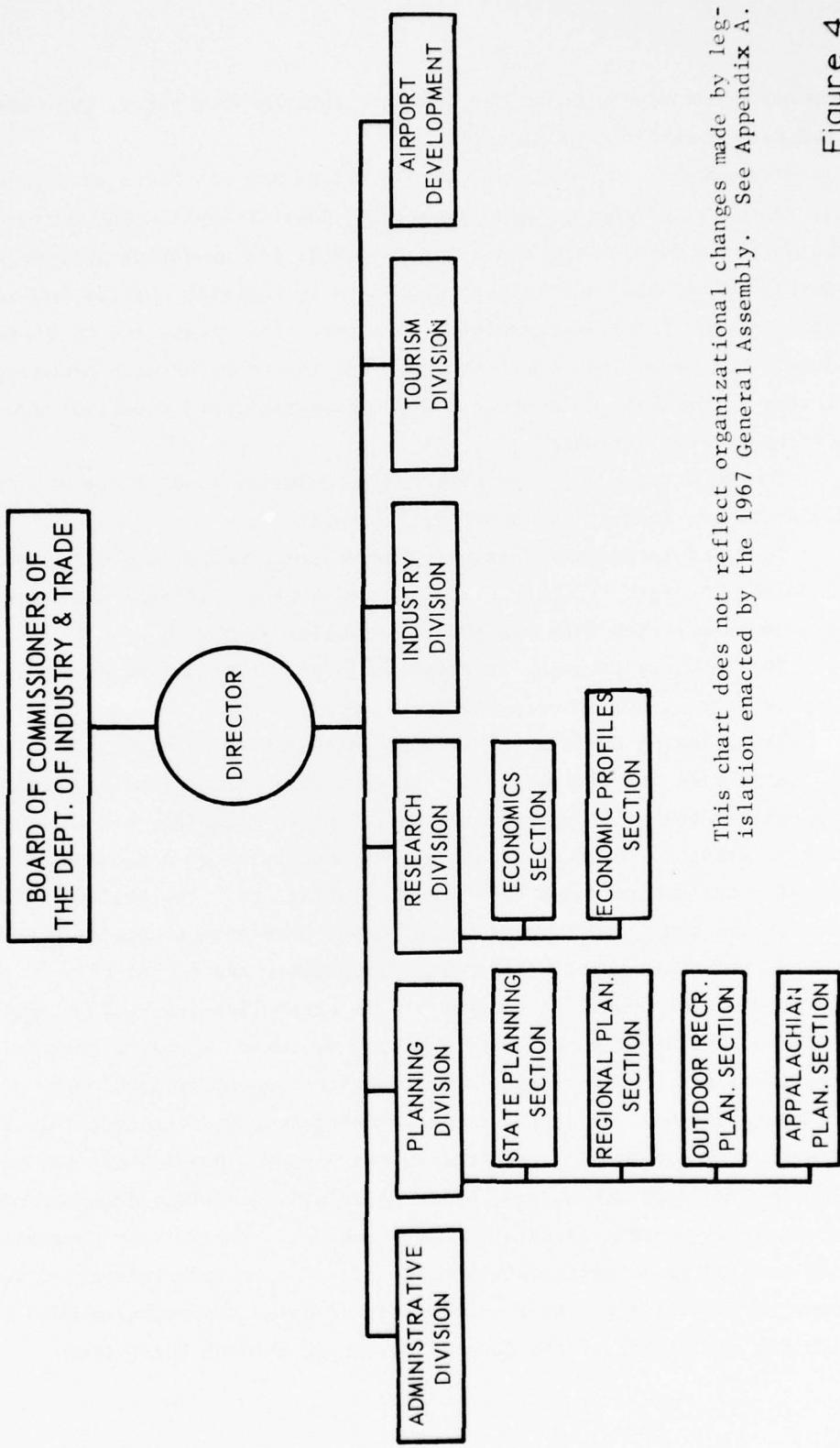
The deputy director of the Department has the responsibility for comprehensive and long range planning by the Department.

The State system has 45 parks. Water-based recreation is an important part of its program as most parks offer fishing and several offer water skiing.

5. Department of Industry and Trade

The Department of Industry and Trade is established by the Georgia Constitution, Article 5, Section 10. It is directed by a 20-man Board of

ORGANIZATION OF THE DEPARTMENT OF INDUSTRY AND TRADE



This chart does not reflect organizational changes made by legislation enacted by the 1967 General Assembly. See Appendix A.

Figure 4

Commissioners appointed by the Governor for six-year terms, two commissioners from each Congressional District.

The powers and duties of the Department and its Board of Commissioners are found in the Georgia Code Annotated, Chapter 40-21. The Board appoints the director of the Department who serves as its executive officer and administrative head and assists the Board in carrying out its duties. The duties of the Board are generally to promote the growth and development of Georgia business, industry, commerce, and resources through planning, publicity, information collection and dissemination, and cooperation with local governments and business.

The Department has five divisions--Administrative, Industry, Planning, Research, and Tourism--as shown in Figure 4.

The Administrative Division sponsors conferences, seminars, and tours to promote Georgia industry. It also operates an airport development program in cooperation with the Federal Aviation Agency.

The Industry Division is responsible for creating and directing a program to attract new industry to the State.

The Planning Division is the designated State Planning Agency of Georgia. Its activities are divided among six sections--Administration, Local Planning, Regional Planning, State Planning, Appalachian Planning, and Outdoor Recreation Planning. The Local Planning Section carries on a program of community planning assistance under the Federal Housing Act. The Regional Planning Section has organized 17 area planning and development commissions across most of the State which it supports financially and technically in planning and promoting economic development. The State Planning Section was organized in 1966. This Section evaluates various statewide planning activities in the Department and in other State agencies with the end to developing a statewide planning program. The Appalachian Planning Section is responsible for coordinating the programs of the Appalachian Regional Development Act and for planning the Appalachian program in Georgia. It assists local governments in obtaining Federal assistance under the Act. The Outdoor Recreation Planning Section is preparing a statewide plan for outdoor recreation facilities under the stimulus of the Federal Land and Water Conservation Fund Act and with the assistance of the Federal Bureau of Outdoor Recreation.

The Research Division provides economic data on the State, primarily for the use of industry. It keeps a basic data file on the resources of the State and a list of new and expanded industries in the State. In cooperation with Georgia Institute of Technology's Industrial Development Division it makes feasibility and marketing studies to encourage industrial expansion.

The Tourism Division undertakes to advertise, sell, and promote tourism in Georgia.

6. Department of Public Health

The "Georgia Health Code" of 1964 contains a rewrite of all Georgia law dealing with public health and has become Title 88 of the Georgia Code Annotated. An 18-member Board of Health supervises the Department of Public Health. The Board members are appointed to six-year terms by the Governor with Senate confirmation from candidates proposed by the Medical Association, the Dental Association, the Pharmaceutical Association, the Veterinary Association, the Municipal Association, and the Association of County Commissioners. The Board elects the director of the Department subject to the approval of the Governor. The Department is given broad powers to safeguard and promote the health of the people of the State.

Provisions of the "Georgia Health Code" (Ga. Code Ann., Chap. 88-26 entitled "Water Supply Quality Control") make certification of public water supply systems, among other things, the responsibility of the Health Department. These provisions were passed during the 1964 session of the legislature after the Water Quality Control Board had been created to carry on a pollution control program which included the certification of sewage and industrial waste collection and treatment systems.

The activities of the Health Department most directly dealing with water resources are in the Water Supply Service and the Engineering-Sanitation Service of the Environmental Health Branch, Division of Physical Health. The organization of the Department is shown in Figure 5.

The Water Supply Service must approve and certify all public water supplies before they can legally be built or operated. It requires that for any proposed public water system two copies of the plans and an engineering report be submitted for review and approval. The Service requires

that monthly water samples and operating records be submitted to it from all public water supplies.

The Engineering-Sanitation Service becomes involved in water management through the Board of Health's regulation requiring construction permits for all impoundments of over 1/10 acre in size as a malaria control measure. The sanitarians of local health departments report new impoundments and notify the owners of the requirements for malaria control and certification. The Engineering-Sanitation Service prepares permits which are issued to the owners by the local sanitarians when prescribed mosquito control measures have been taken.

7. State Water Quality Control Board

The Water Quality Control Board is established under the provisions of the "Georgia Water Quality Control Act" (Ga. Code Ann., Chap. 17-5). The Board consists of nine members appointed by the Governor to staggered four-year terms, each representing one of the following interests: State Health Department, soil and water conservation, municipal government, commerce, agriculture, industry, recreation and fish and wildlife, county government, and the public at large. The Health Department representative is designated by the Act as chairman of the Board.

The operating arm of the Board is the Division for Water Quality Control which is established by the same act as an administrative division of the State Health Department. The Division depends on the State Health Department for administrative support but operates under the independent policy guidance of the Board. The Board appoints an executive secretary who must be a sanitary engineer to serve as executive head and administrative officer of the Division.

The powers and duties of the Board as enumerated in Chapter 17-5 of the Georgia Code Annotated are paraphrased below:

In its duties the board may conduct or cooperate in research for preventing and controlling pollution, cooperate with the Federal government and State agencies; and enter into agreements and compacts with other States and the United States in the prevention and control of pollution in any State waters. The Board in performing its duties is charged with establishing standards of water purity specifying the degree of permissible pollution in waters of the

ORGANIZATION OF THE DEPARTMENT OF PUBLIC HEALTH AND THE WATER QUALITY CONTROL BOARD

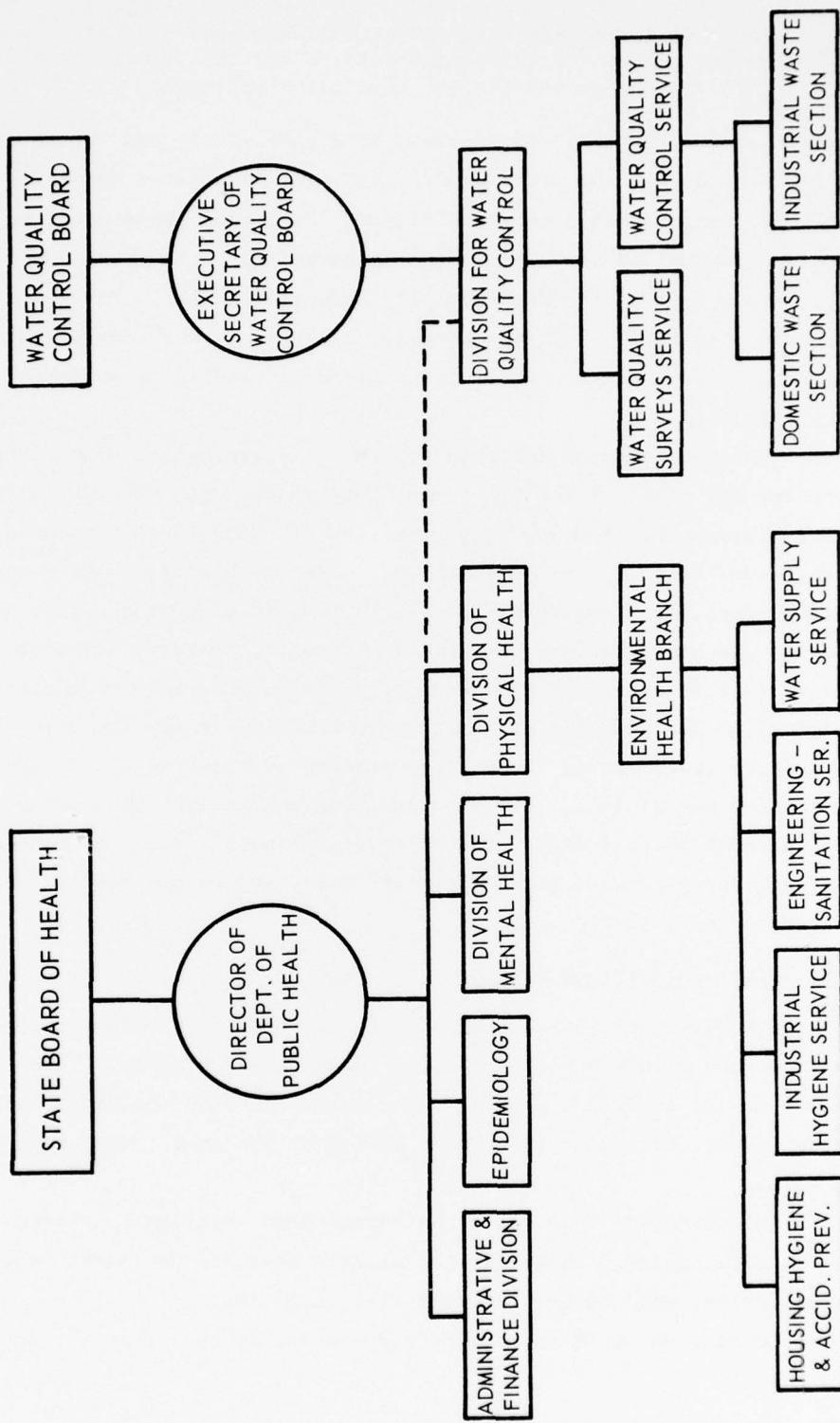


Figure 5

State in accordance with the established uses of the water; and to administer and enforce the laws of the State in the prevention and control of pollution.

The Division is organized as shown in Figure 5. It has two Services-- Water Quality Control and Water Quality Surveys. The Water Quality Control Service through its Domestic Waste and Industrial Waste Sections seeks to obtain the compliance of all waste discharges with the requirements adopted by the Board. The Water Quality Surveys Service collects information on water quality by making chemical, biological, and physical surveys of the waters of the State. This information is used in establishing water quality standards.

The Board has adopted the standard that all wastewater discharges to the streams and lakes of the State must receive at least the equivalent of secondary treatment. A major program of the Division is seeking compliance with this regulation by the municipalities and industries of the State. A voluntary compliance program has been effective in beginning action to bring most waste discharges within the minimum standard; however, it has been necessary to initiate a few formal enforcement actions following statutory procedures. A second major program of the Division is the establishment of water quality standards for interstate streams as required by the Federal Water Quality Act of 1965. Other action programs include the review of waste treatment plant designs, the approval of waste treatment plant construction grant applications by municipalities, and enforcement of marine waste treatment regulations.

8. State Forestry Commission

The State Forestry Commission consists of five members appointed by the Governor with Senate consent for terms of seven years. Three members represent owners of at least 50 acres of forest land in the State, and two represent manufacturers or processors of forest products. (Ga. Code Ann., Chap. 43-2).

The Commission is required to encourage reforestation and better forestry practices through research, technical assistance to forest landowners, fire prevention, and cooperation with other agencies.

The Commission, with the advice and consent of the Governor, appoints a

director who serves as executive secretary and administrative officer of the Commission.

9. Water Resources Center

The Georgia Institute of Technology was designated by the 1965 General Assembly (Ga. Code Ann., Chap. 17-4) as "the State agency of the State of Georgia to establish and operate a center to be known as the Water Resources Center . . . for the purpose of conducting research, investigations, experiments and training in relation to water and resources which affect water". The Center was specifically "authorized to make application for and receive from the Federal Government such funds and grants as shall be made available under Public Law 88-379 of the 88th Congress (78 Stat. 329) . . . for such purposes and projects as will carry out the purposes of such a center". In accordance with this provision, the Center was subsequently designated by the Office of Water Resources Research, Department of Interior, to administer the cooperative research program funded under the provisions of the Federal Water Resources Research Act (P.L. 88-379).

The Water Resources Center had been established as a unit of the Georgia Institute of Technology by action of the Board of Regents of the University System of Georgia in 1963. In 1965, the Board of Regents appointed a Joint Tech-Georgia Advisory Committee on Water Resources Research (representing Georgia Institute of Technology and the University of Georgia at Athens) to advise the Center in carrying out its responsibilities under the provisions of P.L. 88-379.

During 1966, twenty research projects partly financed with P.L. 88-379 funds were carried on at the University of Georgia and the Georgia Institute of Technology. Disciplines represented included biology, forestry, geology, city planning, agricultural economics, zoology, and mechanical, nuclear, civil, ceramic, and textile engineering.

10. Department of Agriculture

The State Department of Agriculture is headed by the Commissioner of Agriculture who is elected by the people as provided in the Georgia Constitution, Article 5, Section 2. The duties of the Commissioner, as listed in the Georgia Code Annotated, Chapter 5-1, include the investigation

of the subject of irrigation and the collection and publication of information on geology and soil conditions.

The Department has no current programs which deal with water except indirectly through its inspection of slaughterhouses and food processing plants. Such operations are not certified by the Department until the State Health Department has approved their water supply and waste disposal facilities.

11. State Highway Department

Road construction by the State Highway Department has many indirect effects on water resources management in the State. In recognition of some of these effects the Department's Planning Division sends preliminary highway plans to the State Game and Fish Commission and the U. S. Soil Conservation Service for their review and comment. The Department conducts trials of soil stabilization measures for reducing erosion of embankments and shoulders. Construction methods have recently been more carefully controlled in an effort to reduce pollution of water supplies and silting of reservoirs from highway construction.

More directly related to water resources management are the Highway Department's programs for collection and analysis of information on floods. Two programs are presently in operation. The first provides for gaging of crest stages and discharges on about 70 drainage areas of from 17 to 1000 square miles. It is operated by the U. S. Geological Survey and financed as a matching fund program by the Highway Department and the Geological Survey. The second program, begun in 1963 and to be completed in 1975, involves the recording of flood hydrographs on about 100 drainage areas of from 0.2 to 17 square miles with rainfall measurements at many of the sites. It is also operated by the Geological Survey, but it is financed by Federal-aid highway planning and research funds and State matching funds.

12. Surveyor General

The duties of the Surveyor General of Georgia have been added to those of the Secretary of State (Ga. Code Ann., Sec. 40-604). Since the granting of the last State public lands in 1861, these duties have related only to preserving the records of original land grants and sales from the

time Georgia became a royal colony in 1752 until 1861. Though primarily of historical importance, these records are occasionally useful in establishing the location of state lines or of old boundaries marked by shifting stream channels.

13. Public Service Commission

A Public Service Commission for the regulation of utilities is established by the Georgia Constitution in Article 4, Section 4, Paragraph 3. The Commission consists of five members elected by the people to six-year terms. It regulates the rates and services of certain public utilities (electric, telephone, telegraph, natural gas, and transportation) (Ga. Code Ann., Title 93). The Commission also supervises the Western and Atlantic Railroad. Its jurisdiction over the sale of water was removed by the legislature in 1960.

C. Boards and commissions

1. State Soil and Water Conservation Committee

The State Soil and Water Conservation Committee has been established under the statutory authority found in the Georgia Code Annotated, Section 5-1807 to Section 5-1810. The Committee consists of five soil and water conservation district supervisors appointed by the Governor to four-year terms. An ex-officio advisory group consists of the directors of the State Agricultural Extension Service, the Georgia Agricultural Experiment Station at Experiment, and the Georgia Coastal Plains Experiment Station at Tifton, the State Conservationist of the U. S. Soil Conservation Service, the dean of the State College of Agriculture at Athens, the director of Vocational Agriculture in Georgia, and the Commissioner of Agriculture.

The Committee was set up in 1937 to encourage the organization of soil conservation districts. It assists the 27 district boards of supervisors in carrying out their programs by facilitating information exchange, co-ordinating district programs, and securing cooperation and assistance from counties and Federal agencies. It represents the districts in securing appropriations from the General Assembly.

2. Georgia Waterways Commission

The Georgia Waterways Commission negotiates with the proper authorities of the United States concerning the development of the rivers of Georgia particularly for flood control; and cooperates with Federal and State authorities towards development of Georgia's rivers. The Commission cannot bind the State to any commitment. Its members may testify before Congressional committees concerning appropriations for river development. The Commission may file from time to time any information developed pertinent to rivers of Georgia with the Department of Industry and Trade. The laws establishing it are found in the Georgia Code Annotated, Chapter 17-3.

The Governor appoints the chairman and six members--one each from the Savannah, Chattahoochee, Altamaha, Etowah, and the Flint River basins plus one from the State at large--to four-year terms. Commission members may receive compensation for their actual expenses only in performance of their duties in connection with Commission activities. The Commission may employ personnel, but the aggregate expenditure for expenses and personnel may not exceed \$10,000.

3. Georgia Forest Research Council

The Georgia Forest Research Council was formed in 1953 under legislative authority summarized in the Georgia Code Annotated, Chapter 43-8, to perform research for the benefit of forestry in Georgia and to coordinate forestry research by other agencies.

The Council is headed by a board of seven commissioners, six appointed by the Governor, plus the director of the Georgia Forestry Commission. The term of office is nine years except for the director of the Forestry Commission who serves as long as he holds that position.

Research projects performed or sponsored by the Council have been in fire protection, genetics, nurseries, pine plantation management, forest physiology, and forest soil. Some of the research on forest soil has included studies of forest soil moisture.

4. Georgia Science and Technology Commission

The Georgia Science and Technology Commission was established in 1964 to advise the Governor, the General Assembly, and State agencies on the

promotion of scientific research and development in the State. The authority for establishing the Commission is found in the Georgia Code Annotated, Chapter 43-10.

The Commission consists of 30 to 40 members appointed by the Governor to six-year terms. The Commission selects an executive committee of not more than nine members which may act for the Commission. The Governor is an ex-officio member of both the Commission and the executive committee.

The Commission appoints a director to serve as administrative head of the staff of the Commission. The Commission also appoints a scientific advisory committee of not more than 20 scientists of outstanding national stature to make recommendations to the Commission on policy and emphasis of science programs. The advisory committee is to meet at least once a year in joint session with the Commission.

One of the four present task groups of the Commission is concerned with development of oceanography in Georgia. Other task groups are concerned with public relations, new industry, and bio-medical research.

5. Georgia Recreation Commission

The Georgia Recreation Commission was formed in 1963 "to formulate in cooperation with other State agencies, interested organizations, and citizens a comprehensive recreation policy for the State of Georgia". The Commission consists of one citizen from each of the 10 congressional districts appointed by the Governor to four-year terms. The Commission is empowered to employ a professional executive director and a permanent staff. Its duties include formulating State recreation policy, studying and publicizing recreation needs, assisting local interests in planning recreation facilities and programs, and recruiting, educating, and placing recreation workers. (Ga. Code Ann., Chap. 99-23).

6. Engineering Advisory Board

The Engineering Advisory Board was created by an Executive Order of the Governor dated January 23, 1960. It originally consisted of five members appointed by the Governor from nominees submitted by the Georgia Society of Professional Engineers. At present the Board has only three members.

The Board was created to advise the Governor on technical aspects of certain civil works projects when he so requested. It has reviewed and held hearings on water resources development projects of the U. S. Army Corps of Engineers. It reviewed the land and water plan of the U. S. Study Commission, Southeast River Basins.

7. Georgia Ports Authority

The Georgia Ports Authority is a public corporation which promotes, develops, and operates terminal facilities at ports of the State. It consists of seven members appointed by the Governor to four-year terms. (Ga. Code Ann., Chap. 98-2).

The Authority has constructed and operates terminal facilities at the ports of Savannah, Augusta, Brunswick, Bainbridge, and Columbus. It finances the construction of these facilities through revenue bonds and State appropriations.

8. Jekyll Island--State Park Authority

The Jekyll Island--State Park Authority is a public corporation which finances, constructs, and operates vacation and recreation facilities at Georgia state parks, particularly at Jekyll Island State Park. It replaces the Jekyll Island Park Authority. The authorizing legislation extends its responsibilities to other state parks (Ga. Laws 1963, p. 391). The five ex-officio members of the authority are the Secretary of State, the Attorney General, the Chairman of the Public Service Commission, the State Auditor, and the Director of the Department of State Parks. (Ga. Code Ann., Chap. 43-6A).

9. Georgia Development Authority

The Georgia Development Authority is a public corporation created to assist rural rehabilitation and the development of agriculture and industry in the State by providing, securing, or guaranteeing loans for such purposes. The 11 members of the Authority are the Commissioner of Agriculture and the Director of the Department of Industry and Trade, both ex-officio, an economist from the University of Georgia, a member of the General Assembly, and six others appointed by the Governor. The eleventh member is the President and General Manager who is elected by the other members. The eight appointed members serve eight-year terms. (Ga. Code Ann., Chap. 62-15).

10. Lake Lanier Islands Development Authority

The Lake Lanier Islands Development Authority is a public corporation formed to develop the recreation potential of islands in Lake Lanier which were licensed to the State by the U. S. Army Corps of Engineers for a state park. The nine members of the Authority are the Secretary of State; the Directors of the Game and Fish Commission, the Department of Industry and Trade, and the State Parks Department; the President of the Upper Chattahoochee Development Association; and four members appointed by the Governor to four-year terms. Two of the four appointed members must be members of the Upper Chattahoochee Development Association. (Ga. Laws 1962, p. 736, as amended by Ga. Laws 1964, p. 731).

11. Industrial development authorities

Numerous local industrial development authorities have been formed to promote industrial development through acquisition, construction, sale and lease of buildings, utilities, and transportation facilities financed by tax-exempt revenue bonds. These authorities have been formed by counties, municipalities, and jointly by counties and municipalities, either by constitutional amendment or under the "Industrial Development Authorities Law" of 1963 (Ga. Code Ann., Chap. 69-15).

12. North Georgia Mountains Commission

The North Georgia Mountains Commission was established by statute in 1963 to acquire, construct, operate, and promote recreation, accommodation, and tourist facilities and services in the 23 counties in North Georgia. The Commission consists of 7 members as follows: the State Auditor and the Chairman of the Georgia Mountains Planning and Development Commission, both ex-officio; three members appointed by the Governor from the North Georgia mountains area as a whole; and two members appointed by the Governor as representatives of the State at large. Appointed members serve six-year terms. The Commission is given general powers including making contracts and leases, exercising eminent domain, and issuing revenue bonds exempt from taxation in Georgia. (Ga. Code Ann., Chap. 99-27).

13. Savannah Port Authority

The Savannah Port Authority was established by constitutional amendment (Ga. Laws 1951, p. 854; Ga. Laws 1965, p. 675). It is authorized

to acquire, construct, operate, sell, or lease self-liquidating projects, such as industrial and manufacturing plants, wharves, docks, roads, bridges, terminals, and ferries. It is governed by a 19-member board. From 1955 until 1966 it was known as the Savannah District Authority.

14. Brunswick Port Authority

The Brunswick Port Authority was created by special act of the General Assembly to construct and operate terminal facilities. It is governed by a 5-member board appointed by the governing bodies of the city of Brunswick and Glynn County. (Ga. Laws 1945, p. 1023; Ga. Laws 1955, p. 3342; Ga. Laws 1958, p. 82; Ga. Laws 1960, p. 1247).

D. Special purpose districts

1. Conservancy

Georgia has no conservancy districts.

2. Flood Control

Georgia has no flood control districts.

3. Sanitary

The Georgia Constitution, Art. 7, Sec. 4, Par. 2, authorizes the General Assembly to "district the territory of any county, outside the limits of incorporated municipalities, for the purpose of providing systems of waterworks, sewerage, sanitation, and fire protection; and authorize such counties to levy a tax only upon the taxable property in such district for the purpose of constructing and maintaining such improvements". No sanitary districts independent of counties are authorized. Sewage or water and sewage districts have been established in some counties.

4. Soil and water conservation districts

Soil and water conservation districts may be formed by the State Soil and Water Conservation Committee on petition of local landowners if the majority of the affected landowners voting in a referendum approve formation of the district (Ga. Code Ann., Chap. 5-19 to 5-22). The boundaries of a district shall be approved by the Committee considering topography, soils, erosion, land-uses, benefits from inclusion, and relation to other districts.

The territory need not be contiguous. Each approved district is governed by a board of supervisors. Two supervisors are appointed by the State Committee, and one is elected by the landowners from each county in the district with the minimum total of elected supervisors being three. Supervisors serve three-year terms. They are given powers to conduct surveys and research on soil erosion, conduct demonstration projects, carry out soil erosion control measures themselves and in cooperation with other State and Federal agencies, and require contributions from landowners who benefit. The supervisors may formulate land use regulations which become obligatory after approval of the State Committee and a favorable referendum by the landowners. The supervisors may use the power of eminent domain to acquire the final 10% of property required for any small watershed project.

The boundaries of the 27 soil and water conservation districts are shown on Figure 6 along with the location of 60 small watershed projects already constructed or approved for construction.

5. Area planning and development commissions

Seventeen multi-county "area planning and development commissions" have been formed in Georgia (Ga. Code Ann., Chap. 69-12, "Planning Commissions"). Their boundaries are shown on Figure 7. The commissions are directed by boards of directors appointed by the governing bodies of the political subdivisions making up the commission area.

These commissions carry on programs of land use and transportation planning for their overall area; assistance to local county and municipal planning commissions; research activities such as mapping, inventories of land use, and economic, demographic, and natural resource studies; resource development studies to identify development prospects for commerce, industry, agriculture, tourism, recreation, and governmental services; and public information. They receive support from the Planning Division of the Department of Industry and Trade.

6. Tributary area development associations

With the guidance of the Tennessee Valley Authority three tributary area development associations which include parts of Georgia have been organized. These associations are nonprofit corporations formed to plan and

WATERSHED PROJECT DEVELOPMENT

December 31, 1966

COOSA RIVER FLOOD CONTROL PROJECT SUBWATERSHEDS, FLOOD CONTROL ACT OF 1944

- | | | |
|-------------------------|-------------------------|-------------------------|
| 1. Settingdown Creek* | 7. Amicalola Creek* | 12. Stamp-Shoal Creeks* |
| 2. Noonday Creek | 8. Raccoon Creek | 13. Mill-Canton Creeks |
| 3. Sharp Mountain Creek | 9. Cartecay River | 14. Ellijay River |
| 4. Pumpkintown Creek | 10. Mountaintown Creek* | 15. Long Swamp Creek |
| 5. Etowah River Reach | 11. Talking Rock Creek | 16. Allatoona Creek* |
| 6. Little River* | | |

*Completed

PILOT WATERSHED - COMPLETED

17. North Fork of Broad River

PUBLIC LAW 566 WATERSHED PROJECTS - CONSTRUCTION COMPLETED OR ALL CONTRACTS AWARDED

- | | | |
|------------------|-----------------------|--|
| 18. Bear Creek | 23. Hazel Creek | 28. Marbury Creek |
| 19. Rocky Creek | 24. Mill Creek | 29. Sandy Creek |
| 20. Sautee Creek | 25. Hightower Creek | 30. Little Tallapoosa |
| 21. Barber Creek | 26. Palmetto Creek | River |
| 22. Rooty Creek | 27. North Broad River | 31. Haynes Creek-
Brushy Fork Creek |

PUBLIC LAW 566 WATERSHED PROTECTION PROJECTS - APPROVED FOR CONSTRUCTION

- | | | |
|---------------------------------------|-----------------------------------|--|
| 32. Sallacoa Creek Area | 42. So. Fork Broad River | 52. Pennahatchee Creek |
| 33. Head of Little Tennessee
River | 43. Middle Fork Broad River | 53. Beaverdam Creek |
| 34. Tobesofkee Creek | 44. Rocky Comfort Creek | 54. South Fork Little
River |
| 35. Potato Creek | 45. Fishing Creek | 55. Bridge Creek-
Ochlockonee River |
| 36. Lower Little Tallapoosa
River | 46. Middle Oconee-Walnut
Creek | 56. Grove River |
| 37. Pine Log Tributary | 47. Cane Creek | 57. Euharlee Creek |
| 38. Bull Creek | 48. Dry Creek | 58. Little Sandy Cr.-
Trail Creek |
| 39. South River | 49. Hiawassee River | 59. Big Cedar Creek |
| 40. Little Satilla Creek | 50. Mill Creek | 60. Fort Lawton-Little
Buckhead Creek |
| 41. Bishop Creek | 51. Turtle River | |

Note: 100 additional Public Law 566 Watershed Protection Project applications had been received by the Soil Conservation Service by December 31, 1966.

GEORGIA
SOIL AND WATER
CONSERVATION DISTRICTS
AND
WATERSHED PROJECTS

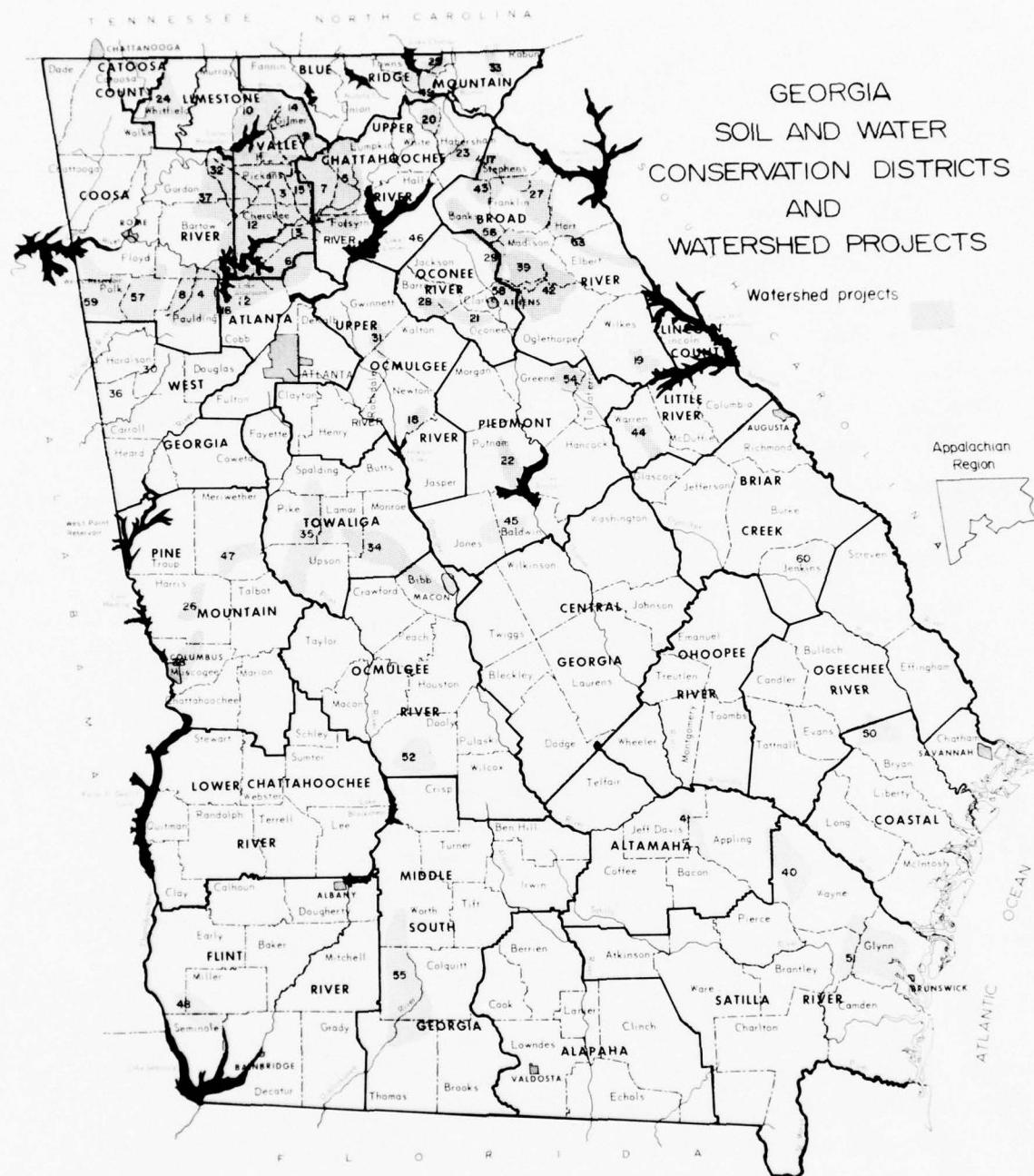


Figure 6

promote the development of the natural and human resources in their areas. They try to secure the cooperation and membership of city and county governments, rural electric cooperatives, chambers of commerce, farm, civic, and trade organizations, and of local residents and businesses interested in their objectives. The Tennessee Valley Authority provides technical assistance requested by the associations. Their funds have come only from membership subscriptions though they are empowered to receive and use any funds or property.

a. Upper Hiawassee Watershed Development Association. This association covering Fannin, Union, and Towns Counties in Georgia and Clay and Cherokee Counties in North Carolina was chartered in July 1962 by the Superior Court in Towns County. It completed an inventory of its resources in 1965 and has begun a number of programs to take advantage of development opportunities which the inventory identified. These programs include a water quality survey, furnishing information to counties and towns on water supply sources, and the revision of power operating schedules at the Chatuge and Nottely projects to benefit recreation uses of the lakes.

b. Twin-State Development Association, Inc. This association covering Rabun County in Georgia and Graham, Jackson, Macon, and Swain Counties in North Carolina was chartered by the Secretary of State of North Carolina in September 1965. It is making a resource inventory.

c. Walker-Catoosa-Dade Development Association, Inc. This association covering Walker, Catoosa, and Dade Counties in Georgia was chartered by the Superior Court in Walker County in June 1966. It is beginning a resource inventory.

E. Other political subdivisions

1. Municipal

Georgia had 561 municipalities in 1962 of which 114 had populations of more than 2,500. According to the 1960 Census 54% of Georgia's population lived in incorporated areas.

The General Assembly grants charters for incorporation of municipal areas by a special act for each municipality. There are no legal differences between cities and towns (Ga. Laws 1964, p. 170). Limited home rule powers

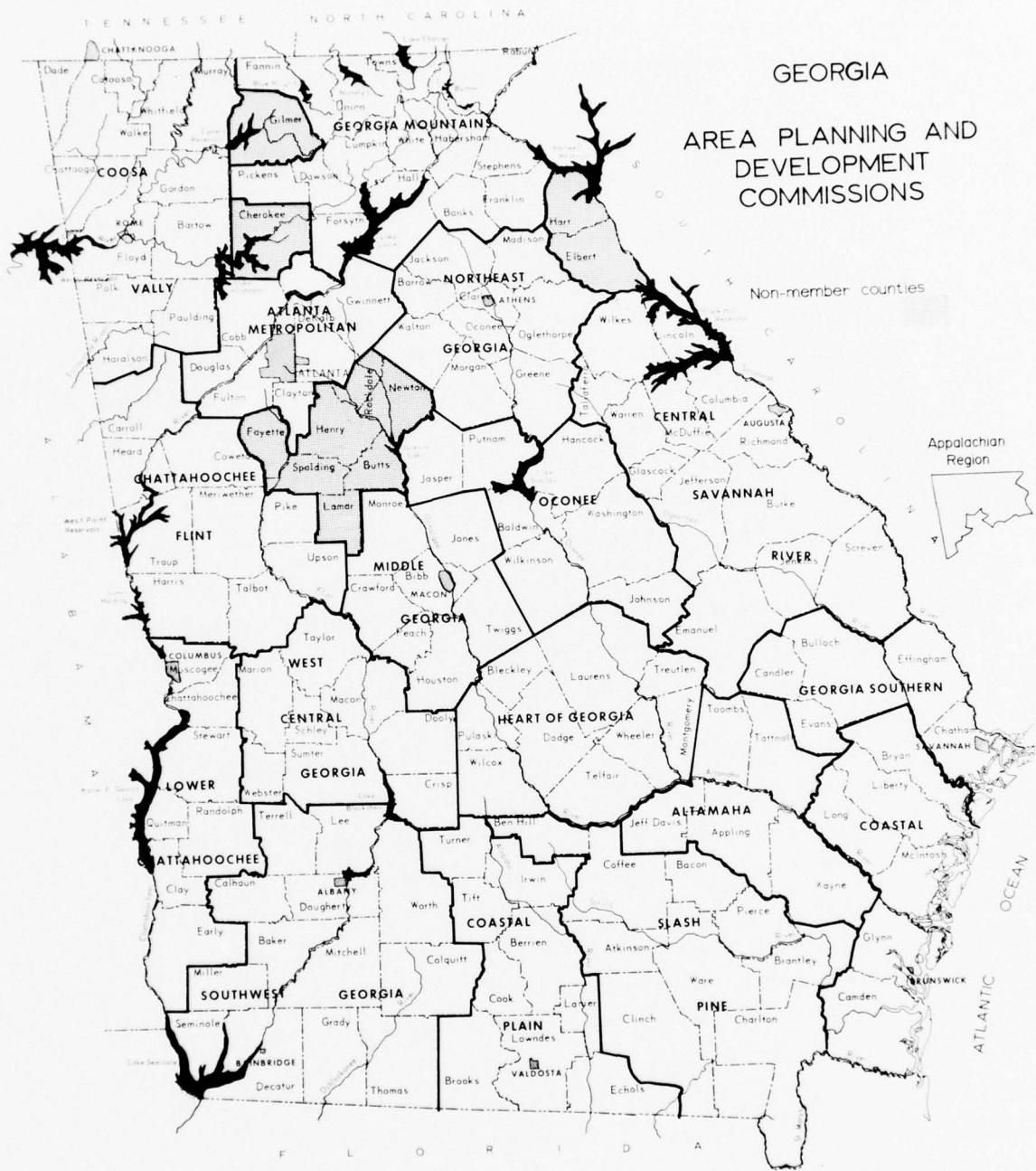


Figure 7

have been granted to municipalities under the "Municipal Home Rule Act of 1965" (Ga. Laws 1965, p. 298).

Municipal functions and responsibilities include public safety; education; libraries; parks, playgrounds, and recreation; health and hospitals; public welfare; housing; proprietary functions such as water supply, electric power distribution, and airports; and public works such as planning and zoning, streets, sewage systems, and sanitation.

2. County

Georgia has 159 counties which range in area from 114 to 956 square miles and in population from 1,876 to 556,326 (1960 Census).

The form and powers of county governments are determined by the General Assembly. A constitutional amendment ratified in November 1966 grants certain home rule powers to counties in matters not covered by general law (Ga. Laws 1965, p. 752; Ga. Laws 1966, p. 869). The powers do not extend to changes in the county governing authority.

Georgia counties are generally governed by a Board of Commissioners of Roads and Revenue. In 1966, 25 counties had one-man boards, in Rabun and in Union Counties the County Ordinary provided the functions of a governing entity, Towns County had no commissioners, Fulton County had a county manager hired by its board, and the remaining 130 counties had boards of from three to eight members.

County governing authorities are responsible for levying property taxes; licensing certain businesses; constructing and maintaining streets, roads, and public buildings; education; health; planning and zoning; providing water, sewage, fire protection, and police protection; probation of wills; registration of deeds; conduct of elections; voter registration; welfare; hospitals; and airports. Counties may be districted and taxed by district for water supply, sewage and sanitation facilities, and fire protection. Some counties have consolidated certain functions across county lines or with municipalities such as planning commissions, departments of health, and hospitals. They may contract with other governmental units or with corporations for provision of services.

3. Township

Georgia has no township governments.

III. POLICY

A. Centralized vs. decentralized responsibility for water management functions

Authority governing the protection, conservation, development, and use of water and other resources in Georgia is fragmented among the departments, agencies, and other entities of the State. Thus, the responsibility for water management functions in Georgia may be appropriately characterized as decentralized. All State agencies which deal with water management do so within a limited field of interest.

B. "Home rule" concept

The "Municipal Home Rule Act of 1965" (Ga. Laws 1965, p. 298) provides procedures for amending municipal charters by ordinance of the municipal governing authority or by local referendum except as limited by the Act and by general law. Reserved to the General Assembly by the Act are actions to (1) change municipal boundaries, (2) change the nature of the municipal governing authority, (3) define or punish crimes covered by State law, (4) adopt any form of taxation not authorized by law or the Constitution, (5) regulate any but municipal courts, (6) affect the exercise of the powers of eminent domain (7) control any business activity regulated by the Public Service Commission unless authorized by charter, general law, or the Constitution, and (8) establish or operate an independent school system. The Act specifically grants municipalities the authority to set the salaries and fringe benefits of its employees.

In November 1966, two constitutional amendments extending home rule powers to counties similar to those granted municipalities were ratified by the electorate (Ga. Laws 1965, p. 752; Ga. Laws 1966, p. 869). The two amendments are identical except that the second added a paragraph which served to save existing local amendments from repeal.

C. Financing

The Georgia Constitution forbids the State from incurring debt exceeding \$4,000,000 and limits this debt to temporary revenue deficits (\$500,000) and teachers' salaries (\$3,500,000). However, a constitutional amendment

in 1960 allowed the State to assume responsibility for the debts of its authorities which the legislature had created as public corporations outside the debt limitation. As of January 1966 the State's general indebtedness was about \$587,000,000, incurred primarily by State authorities.

The State finances, builds, and operates port facilities through the Georgia Ports Authority. Capital developments at State parks are financed through the Jekyll Island--State Park Authority. The largest state-wide authorities are the Rural Roads, School Building, University System, and Highway Authorities.

The Georgia Constitution limits the debts of counties and municipalities to 10% of the assessed value of their taxable property.

The General Assembly has authorized construction grants to counties and municipalities for up to 100% of the cost of water pollution control facilities. Such grants would supplement Federal grants for this purpose. No appropriations have been made under this authority.

The State Soil and Water Conservation Committee administers appropriations to soil and water conservation districts for the operation and maintenance of water control structures and for legal expenses.

In its regulations for sewage systems (Regulation 1.05(e)) which will be operated by private developers the Water Quality Control Board requires that a trust indenture be established to insure continuous operation of any privately owned sewage system in the event that it is abandoned by its developer. The State Health Department uses a similar requirement in its regulation of private water supply systems.

D. Cooperation, coordination, and cost sharing

1. With Federal programs

Legislatures and governors have approved and encouraged Federal water development programs in the State. Several memorials urging progress on specific Federal river basin development projects have come from the legislature. The programs of many state agencies have been shaped to accommodate Federal funds for specific purposes thereby leading to cooperation, coordination, and cost sharing.

The Georgia Constitution, Art. 7, Sec. 9, Par. 2(d), requires that all Federal funds received by the State be "continually appropriated in the exact

amounts and for the purposes authorized and directed by the Federal Government in making the grant."

The State agencies authorized by statute to cooperate with and assist the Federal Government include the State Soil and Water Conservation Committee, the Water Quality Control Board, the Board of Industry and Trade, the Department of Mines, Mining, and Geology, the Department of State Parks, the Forestry Commission, the Forest Research Council, the Game and Fish Commission, the Georgia Waterways Commission, and the State Health Department.

State agencies specifically empowered to enter into contracts with the Federal government include the Water Resources Center, the Department of State Parks, the Forestry Commission, the Forest Research Council, and the Game and Fish Commission.

State agencies authorized to act as agents of the Federal Government include the soil and water conservation districts and the Georgia Ports Authority.

County and municipal planning commissions are authorized by statute to cooperate with the Federal Government and to enter into contracts with it.

Aside from cooperation and coordination in specific programs, the broadest attempt at State-Federal cooperation and coordination in water resources is through the Southeast Basins Inter-Agency Committee. The interest of Georgia in the activities of this state-Federal organization is represented through the member appointed by the Governor to this Committee.

2. Interstate

The State appoints a member to the Resources Advisory Board and contributes \$25,000 a year to support activities of the Board in encouraging the coordination and development of the land and water resources in the Southeast River Basins.

The State appoints three commissioners to the Atlantic States Marine Fisheries Commission and contributes \$1,200 a year to its support.

Georgia has reciprocal agreements with neighboring states to accept the use of their boat and fishing licenses in waters lying between those states and Georgia.

3. With political subdivisions

The State has no uniform policy of cooperation, coordination, or cost sharing with its political subdivisions in resource management. The Department of Industry and Trade encourages and supports regional planning and development commissions and local planning commissions. The Game and Fish Commission cooperates with counties in development game management and fishing areas. The General Assembly has authorized funds to help construct municipal sewage facilities, but none have been appropriated.

4. Multi-purpose operations

The only water resource developments multipurpose in nature in which the State participates are the small watershed projects of the soil and water conservation districts. The State endorses the concept of multi-purpose resources development by support of the Resources Advisory Board, but the authority of most State agencies is largely single-purpose.

E. Use of existing authority

Generally the authority under which the State agencies function is broader than their activities.

F. Changes

1. Recently adopted

The Game and Fish Department and the State Parks Department have recently been reorganized to facilitate better long-range program planning, and for other purposes. The Water Quality Control Board was organized in 1965, removing water pollution control activities from the direction of the State Health Department.

2. Recommended but not adopted

A water resources planning and coordinating act aimed at establishing a full-time agency for formulating policy and planning and coordinating State programs in water resources was defeated in the legislature in 1966 and in 1967. Recommendations of the Governor's Commission for Efficiency and Improvement in Government have been partially adopted for operation of the Game and Fish Department. The December 1966 report of that commission on the Department of Mines, Mining, and Geology recommends significant changes in that department to increase its programs and improve its program planning.

IV. PROGRAMS

A. Research

Water-related research in Georgia is performed by State and Federal agencies, colleges and universities. State-funded research is primarily that which is conducted at units of the University System of Georgia, within which the largest programs are carried on at the University of Georgia at Athens and the Georgia Institute of Technology at Atlanta. It is not the purpose of this report to describe the programs carried on by the Federal agencies.

Research programs at the colleges and universities reflect the special competence and purpose of each institution. Some of the areas in which water-related research is currently underway are as follows:

Ecology of estuarine marine life; Radiotracer studies on the mechanics and properties of flow through soils; Geologic, mineralogic, and water quality studies of selected land and water areas of Georgia; Studies of rainfall variations and the rainfall-runoff process; Methods of pollution identification, description, and treatment; Studies of the basic hydraulic and fluid mechanic properties of water; and social, economic and legal aspects of water resources development and use.

One of the first large research programs sponsored by a State agency is for determining the effects of treated paper mill wastes on the ecology of an estuarine area.

A report prepared for the Southeast Basins Inter-agency Committee by its Subcommittee on Basic Data and Research, April 1966, summarizes the programs by Georgia state agencies for research and basic data collection in the field of water resources.

B. Data collection and interpretation

A stream gaging program is being carried on by the U. S. Geological Survey with matching funds from the Department of Mines, Mining, and Geology and the State Highway Department. The results are published annually by the U. S. Geological Survey as Surface Water Resources of Georgia. Additionally, the State Highway Department and the U. S. Bureau of Public Roads have contracted for the Geological Survey to gage about 100 small (0.2 to

17 sq. mi.) watersheds over a twelve-year period as part of a flood frequency study.

A matching-fund program of groundwater study is carried on by the Department of Mines, Mining, and Geology and the U. S. Geological Survey.

Some of the State funds come from municipalities who wish to increase their groundwater supplies.

A cooperative topographic mapping program is carried on by the Department of Mines, Mining, and Geology and the U. S. Geological Survey. The amount of matching funds made available by the State for this program has been small.

The Water Supply Service of the Department of Health makes regular chemical analyses of water supplies as a measure to protect public health. Also, the Water Supply Service maintains an inventory of public water supply systems in the State. The Division for Water Quality Control collects chemical, physical, and biological data on stream quality as part of its program of pollution abatement. The Division for Water Quality Control also maintains an inventory of pollution control facilities. This water quality information and that from several Federal agencies is available for use by planning commissions, industrial developers, game and fish program planners, and others concerned.

The Game and Fish Commission records times of stratification and overturn, use by fishermen, and catch at major reservoirs.

The Department of State Parks keeps records of the use of State park facilities and prepares topographic maps of the parks and aerial photographs of parks and their surrounding areas.

The Forestry Commission maintains county-by-county information about forest resources on punched cards for automatic data processing. The information includes ownership patterns, forest land use trends, number of seedlings planted, pulpwood production, and timber production.

Economic, sociologic, hydrologic, and physical data are collected for research purposes by various Schools and Departments of the Georgia Institute of Technology and the University of Georgia.

C. Planning

Water resources planning in Georgia has been done on its broadest scale by Federal agencies, namely, the U. S. Study Commission, Southeast River

Basins, the Tennessee Valley Authority, the Soil Conservation Service, and the Corps of Engineers. The interstate Resources Advisory Board and the State-Federal Southeast Basins Inter-agency Committee encourage planning by the State, but at present no State agency engages in comprehensive water resources planning. The Planning Division of the Department of Industry and Trade has recently organized a State Planning Section to evaluate statewide planning activities as the beginning of a state planning program.

Active water resources planning programs are found in the three Tributary Area Development Association watersheds in the Tennessee River valley of North Georgia. These programs involve only seven counties in Georgia, however.

Much more widespread are the cooperative planning activities of the soil and water conservation districts and the U. S. Soil Conservation Service. These programs concentrate on small non-urban watersheds and on erosion control and flood retarding measures but they also provide for water supply, fish and wildlife, and recreation. Planning teams are employed by the Soil Conservation Service, but State funds contribute substantially to their support.

The State has not received any funds from the Federal Government under the "Water Resources Planning Act" of 1965 (Public Law 89-80). It has received planning funds under section 701 of the "Housing Act" of 1954 and the "Land and Water Conservation Fund Act" of 1965. Federal grants have been made to several area planning and development commissions for regional planning of rural water supply and waste disposal systems under provisions of the amended "Consolidated Farmers Home Administration Act" of 1961.

D. Construction and development

1. Flood control

The major flood control program in Georgia is that of the U. S. Army Corps of Engineers which has constructed large reservoirs in the Savannah, Chattahoochee, and Coosa River basins for flood control and other purposes. Most local protection works in urban areas have been planned, constructed, or improved by the Corps.

The Tennessee Valley Authority has constructed three multi-purpose reservoirs which are located partly in Georgia and provide some flood control benefits, though most of these benefits are to other states.

The multi-purpose small watershed projects constructed by soil and water conservation districts include flood control features as a major purpose. The Federal government, through the Soil Conservation Service, has shared in the cost of these projects.

2. Water supply

The State has assumed no broad responsibility for developing water supplies. It has constructed a few small water supplies at State parks and institutions. It has not aided local governments in constructing water supplies except by providing limited technical information.

Small watershed projects constructed by soil and water conservation districts have provided municipal and industrial water supply sources in several instances.

The State has not used the provision of the Federal "Water Supply Act of 1958" which allows the inclusion of storage reserved for water supply in major reservoirs constructed by the Corps of Engineers with deferred payment of the non-Federal share of the cost.

3. Water quality control

The State has authorized but not funded a program of financial grants to municipalities and counties for construction of water pollution control projects; so the responsibility for financing such projects has remained with local governments and with private concerns.

Several waste collection and treatment facilities have been constructed by the State at State parks and institutions.

4. Navigation

The Georgia Ports Authority plans, constructs, and operates terminal and cargo handling facilities at the ports of Savannah, Augusta, Brunswick, Bainbridge, and Columbus.

5. Hydro-power

The State has taken no direct part in the development of hydro-power. Significant hydroelectric power developments have been constructed by the Corps of Engineers, the Georgia Power Company, Tennessee Valley Authority, the Crisp County Power Commission, and several industries.

6. General recreation

The State offers water recreation activities at most State parks. These activities include fishing, boating, swimming, and water skiing. Facilities for these purposes have been constructed by the Department of State Parks and the Jekyll Island--State Park Authority.

The Lake Lanier Islands Development Authority is planning the development, subdivision, and lease of island property at Lake Lanier for vacation homes and other water connected recreational facilities.

Several of the reservoirs constructed under the programs of the soil and water conservation districts have provided facilities for fishing and swimming.

7. Fish and wildlife

The Game and Fish Commission operates eight fish hatcheries. These hatcheries annually provide fingerlings for stocking about 1000 new or drained lakes. Together with Federal hatcheries they also provide 500,000 catchable trout for stocking streams each year. The Commission has begun a program to construct about 50 points of boat access to public waters with Federal and county cooperation. It has developed game management areas in cooperation with private land holders and in National Forests.

The reservoirs constructed under the programs of the soil and water conservation districts are stocked for fishing, and the plantings for some of their land control measures are designed to provide cover for game.

E. Regulation

1. Water use

The Water Supply Service of the State Health Department regulates the construction and operation of all public water supplies both surface and ground water.

2. Water quality

The Water Quality Control Board and the Division for Water Quality Control regulate the construction and the discharge quality and quantity of municipal and industrial waste systems. The Board is also establishing water quality standards on interstate streams in compliance with Federal requirements.

3. Construction

The Water Supply Service of the State Health Department reviews and approves all plans for construction of public water supplies. The Division for Water Quality Control reviews and approves all plans for municipal and industrial waste disposal systems. The construction and structural safety of dams are not regulated by the State in any way.

4. Well drilling

There is no State regulation of water well drilling. Wells which are part of a public water supply are regulated as to their sanitary features by the Water Supply Service of the State Health Department.

5. Channel encroachments

The Game and Fish Department is empowered to require fishways in dams on fresh water streams. It does not routinely exercise this power.

6. Use of flood plains

There is no State statute or regulation governing flood plain management or regulating construction in floodways, but political sub-divisions may zone for flood protection.

F. Drainage

Though counties are empowered to establish and maintain systems of drainage, there are no known county drainage systems in operation.

G. Irrigation

Some small watershed projects provide for irrigation water supply.

H. Control of erosion and sedimentation

A primary purpose of the programs of the soil and water conservation districts is the control of erosion and sedimentation. The U. S. Soil Conservation Service with the support of the State operates four soil conservation planning teams in the State.

The State Highway Department has been increasing its efforts to reduce erosion both during construction and on completed roadways.

I. Reservoir sites

There is no State program for reservoir site acquisition or reservation by zoning.

V. APPENDIXES

	Page
A. LEGISLATION ENACTED DURING THE 1967 REGULAR SESSION OF THE GENERAL ASSEMBLY OF GEORGIA	71
B. INVENTORY OF LAND AND WATER RESOURCE DEVELOPMENT PROJECTS	75
C. BIBLIOGRAPHY	109

Preceding Page BLANK - NOT FILMED

APPENDIX A

LEGISLATION ENACTED DURING THE 1967 REGULAR SESSION
OF THE GENERAL ASSEMBLY OF GEORGIA

This appendix summarizes actions taken by the Georgia General Assembly during the 1967 regular session that affect water and related land resources development in the State.

1. State Planning and Programming Bureau

A State Planning and Programming Bureau has been established as a separate unit of the Executive Department with the Governor as ex-officio Director of State Planning in accordance with 1967 legislation (Act 123, Ga. Laws 1967, p. 252). Its purpose is to promote "the orderly growth and development of the State of Georgia through the proper planning and programming of the affairs of State Government".

The Bureau shall provide planning and programming services, technical assistance, information, and advice to other public agencies. It shall encourage comprehensive and coordinated planning of the affairs of State Government and may prescribe systems of records and standards for effective planning and programming by State Government. The Governor shall prepare a biennial development program for consideration of the General Assembly.

The administrative head of the Bureau shall be the State Planning Officer, appointed by the Governor, who shall be professionally qualified in state or regional planning.

The Bureau shall perform the following functions:

- a) Prepare comprehensive, long-range recommendations for growth of the State in such areas as transportation, outdoor recreation, water resources, and economic development.
- b) Analyze the quality and quantity of governmental services at all levels required for the orderly growth of the State.
- c) Harmonize all planning activities within the State.
- d) Provide technical assistance in planning to other state, local, and public departments, agencies, and bodies.
- e) Coordinate federal aid programs in the State.
- f) Evaluate progress in achieving the goals and objectives of the biennial development program.

g) Obtain and use all federal, private, or public financial support available for the purposes of this Act.

h) Assist the General Assembly on request.

As parts of a program of continuous development planning the Governor, through the Bureau, shall have in continuous process and revision a long-range Comprehensive Development Policies Plan; the Bureau shall cause to be prepared a series of long-range Functional Development Plans; and, upon the Governor's request, each state agency shall appoint a planning officer to coordinate program plans prepared for his agency.

The Bureau shall make and keep up to date an inventory of Federal programs and projects involving the State and local governments and shall keep information on all programs supported by federal aid.

The Bureau shall coordinate local planning programs and provide them with technical assistance upon request. An advisory committee consisting of one member representing each area planning and development commission shall be appointed by the Governor to advise the Bureau on multi-county planning and development.

The powers of the Department of Industry and Trade relating to the functions of the State Planning Commission are transferred to the new Bureau. The personnel and property of the Planning Division of the Department of Industry and Trade are transferred to the new Bureau.

The Act creating the State Planning and Programming Bureau was signed by the Governor on March 31, 1967. The director of the Bureau was appointed on April 1, 1967 and the Bureau began operations officially on that date.

2. Georgia Commission for the Development of the Chattahoochee River

Basin

Legislation creating the Commission is entitled an "Act Creating the Georgia Commission for the Development of the Chattahoochee River Basin" (Act 548, H.B. No. 476). The Commission consists of 40 members--20 appointed by the Governor and one each appointed by the governing authorities of the 20 basin counties, all to four-year terms. The Commission

"is created for the purpose of encouraging and promoting the expansion and development of the full economic, industrial

and recreational potential of the Chattahoochee River and its tributaries. By way of illustration and not of limitation, said Commission shall encourage and promote the development of navigation to Atlanta, trade and other commercial facilities, flood control, water supply, pollution abatement, hydro-electric power generation, recreation, protection and propagation of fish and wildlife, and the proper flow of dam-controlled water discharges."

The Commission is given power to receive and administer appropriations, gifts, and grants; to secure cooperation of other State agencies; employ an executive director and other personnel; and to make contracts. Its duties are to formulate a comprehensive program and plan for the development of the Chattahoochee River Basin in cooperation with other governmental agencies and to submit an annual report to the Governor and General Assembly.

Members of the Commission have been appointed and the organizational meeting of the Commission was held May 17, 1967.

2. Rivers and Harbors Development Commission

By resolution of the General Assembly (Ga. Laws 1967, p. 516) a Rivers and Harbors Development Commission consisting of the Governor, the State Auditor, and the State Attorney General is created to cooperate in river and harbor development projects approved by the U. S. Congress for development in Georgia.

4. Ocean Science Center of the Atlantic Commission

In an act approved March 8, 1967 (Ga. Laws 1967, p. 12) the General Assembly creates the Ocean Science Center of the Atlantic Commission. Its nine-member board is to "plan, promote and develop an oceanographic research complex".

5. Committee to Study Problems of Strip Mining Operations

A "Committee to Study Problems of Strip Mining Operations" was created by resolution of the General Assembly (Ga. Laws 1967, p. 519). It consists of 18 members from the General Assembly, the State Soil and Water Conservation Committee, the Department of Mines, Mining, and Geology, the Georgia Forestry Commission, the Water Quality Control Board, and the mining industry. The Committee is directed to make its studies of strip mining operations in Georgia and report to the General Assembly by December 1, 1967.

6. Tax exemptions for equipment to reduce air and water pollution

In 1967, the General Assembly exempted property and equipment used primarily for reducing or eliminating air or water pollution from the State sales tax (Act 173; H.B. No. 478; Ga. Laws 1967, p. 286) and from ad valorem property taxes (Act 456; H.B. No. 476; [not printed at the date of this report]). These exemptions are provided for by a constitutional amendment (Ga. Laws 1966, p. 993) which was ratified in November 1966 allowing the General Assembly to exempt from taxation all facilities installed for the primary purpose of reducing air or water pollution. Exemption from paying State sales tax requires a certificate from the State Revenue Commissioner. Exemptions from ad valorem taxes require certification by the Georgia Water Quality Control Board and/or the State Health Department.

APPENDIX B

INVENTORY OF LAND AND WATER RESOURCE DEVELOPMENT PROJECTS IN GEORGIA

This inventory contains information on significant land and water resource developments in Georgia. It includes small watershed projects, Federal multipurpose reservoir developments, hydroelectric developments, State Parks, and game and fish management areas.

The inventory is arranged according to the 13 river basins shown on Figure 8 in the following order:

- | | |
|------------------|-----------------|
| 1. Coosa | 8. Ogeechee |
| 2. Tennessee | 9. Satilla |
| 3. Tallapoosa | 10. St. Marys |
| 4. Savannah | 11. Suwannee |
| 5. Chattahoochee | 12. Ochlockonee |
| 6. Flint | 13. Aucilla |
| 7. Altamaha | |

Small watershed projects have been constructed in Georgia under two Federally sponsored programs administered by the U. S. Department of Agriculture. The Flood Control Act of 1944 (Public Law 534) authorized the Coosa River flood control project. The Watershed Protection and Flood Prevention Act of 1954 (Public Law 566) authorized Federal participation in numerous additional small watershed projects for flood prevention purposes. Though the Federal Government participates in planning and construction, these small watershed projects remain under local ownership and operation. The locations of 60 authorized small watershed projects in Georgia are shown on Figure 6.

The abbreviations found under the heading "Purpose" in the inventory are defined as follows:

FC	-	flood prevention and flood control
M&I	-	municipal and industrial water supply
R	-	recreation
F&W	-	fish and wildlife
P	-	hydroelectric power
Reg	-	flow regulation
I	-	irrigation water supply
N	-	navigation
D	-	drainage

An "Inventory of Municipal Sewerage Systems and Waste Treatment Plants in the State of Georgia" is published by the Georgia Water Quality Control

Board. An inventory, "Georgia Water Supplies", is published by the Georgia Department of Public Health. These two inventories which may be obtained from the publishing agencies contain brief descriptions of the public water and sewage systems in the State.

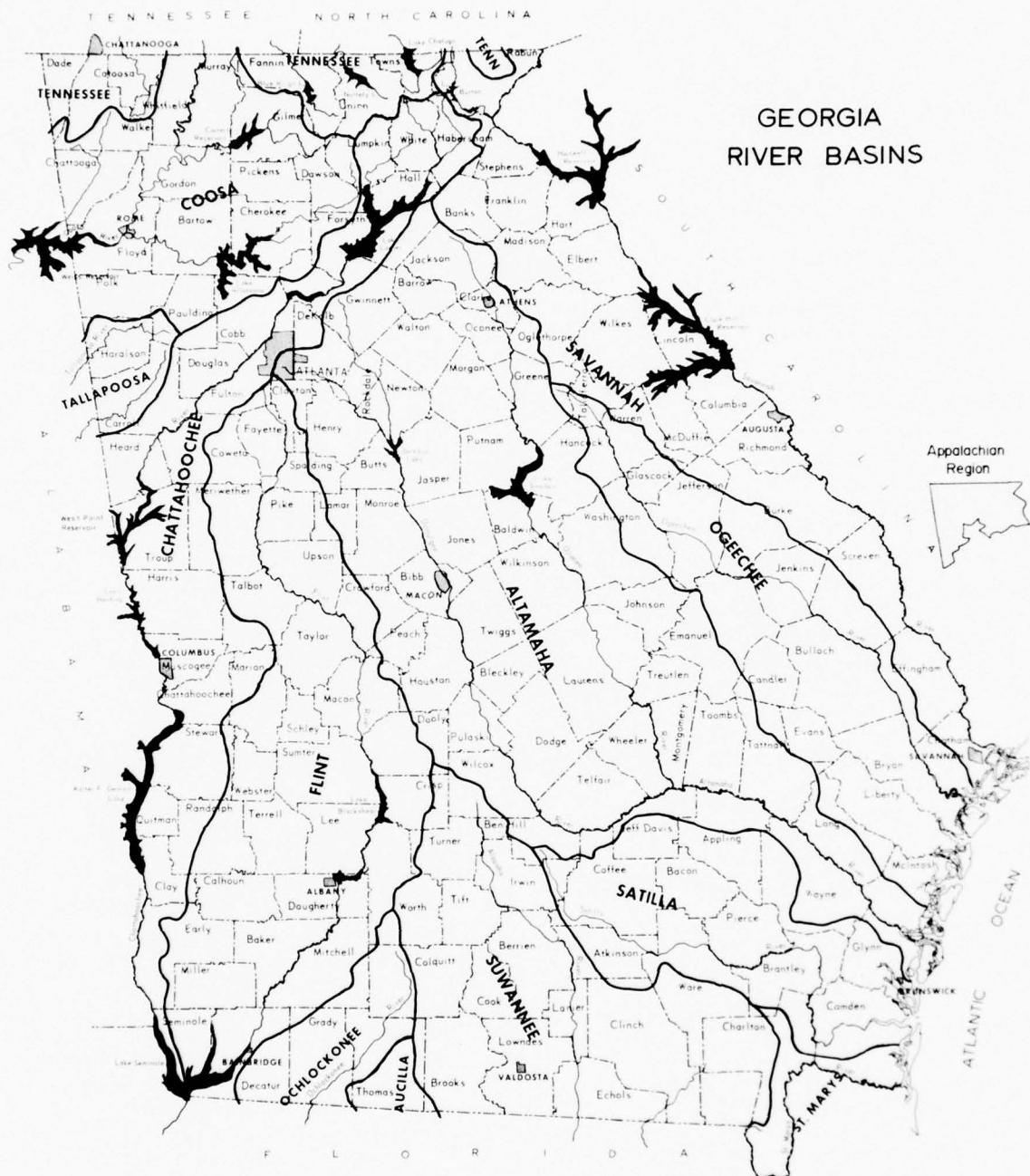


Figure 8

STATE PARKS (Administered by the Georgia Department of State Parks)

1. Alexander H. Stephens Memorial
2. Amicalola Falls
3. Bainbridge
4. Black Rock Mountain
5. Bobby Brown Memorial
6. Chehaw
7. Cloudland Canyon
8. Crooked River
9. Elijah Clarke Memorial
10. Fairchild
11. Fort Mountain
12. Fort Yargo
13. F. D. Roosevelt
14. George Washington Carver
15. Georgia Veteran's Memorial
16. Gordonia-Altamaha
17. Hard Labor Creek
18. High Falls
19. Indian Springs
20. Jefferson Davis
21. Keg Creek
22. Kolomoki Mounds
23. Laura S. Walker
- A. FDR Warm Springs Memorial (Administered by the F.D.R. Warm Springs Memorial Association)
- B. Stone Mountain Memorial Park (Administered by the Stone Mountain Memorial Association)
- C. Jekyll Island State Park (Administered by the Jekyll Island--State Park Authority)
24. Lincoln
25. Little Ocmulgee
26. Magnolia Springs
27. Red Top Mountain
28. Reed Bingham
29. Santa Maria
30. Seminole County
31. Senoia
32. Stephen Collins Foster
33. Tugaloo
34. Unicoi
35. Victoria Bryant
36. Vogel
37. Yam Grandy
38. Mistletoe
39. Spring Creek
40. Four Mile Creek
41. Blackburn
42. Hawkinsville
43. Lake Chatuge
44. Moccasin Creek
45. Nancy Hart

WILDLIFE MANAGEMENT AREAS (Administered by the Georgia Game and Fish Commission)

1. Altamaha Waterfowl Public Hunting Area
2. Arabia Wildlife Mgt. Area
3. Blue Ridge Wildlife Mgt. Area
4. Bowen Mill Fish Hatchery
5. Bullard Creek Wildlife Mgt. Area
6. Cedar Creek Wildlife Mgt. Area
7. Chattahoochee Wildlife Mgt. Area
8. Chestattee Wildlife Mgt. Area
9. Chickasawhatchee Wildlife Mgt. Area
10. Clark Hill Wildlife Mgt. Area
11. Cordele Fish Hatchery
12. Coleman River Wildlife Mgt. Area
13. John's Mountain Wildlife Mgt. Area
14. Lake Allatoona Public Hunting Area
15. Lake Burton Fish Hatchery
16. Lake Burton Wildlife Mgt. Area
17. Lake Russell Wildlife Mgt. Area
18. Lake Seminole Waterfowl Public Hunting Area
19. McDuffie Public Fishing Area
20. Oaky Woods Wildlife Mgt. Area
21. Piedmont Exp. Station Game Mgt. Area
22. Richmond Hill Fish Hatchery
23. Steve Cocke Fish Hatchery
24. Summerville Fish Hatchery
25. Swallow Creek Wildlife Mgt. Area
26. Suwanoochee Wildlife Mgt. Area
27. Walton County Fish Hatchery
28. Warwoman Game Mgt. Area
29. Waycross State Forest Wildlife Mgt. Area
30. Whitesburg Public Hunting Area

GEORGIA
STATE PARKS
AND
WILDLIFE
MANAGEMENT
AREAS

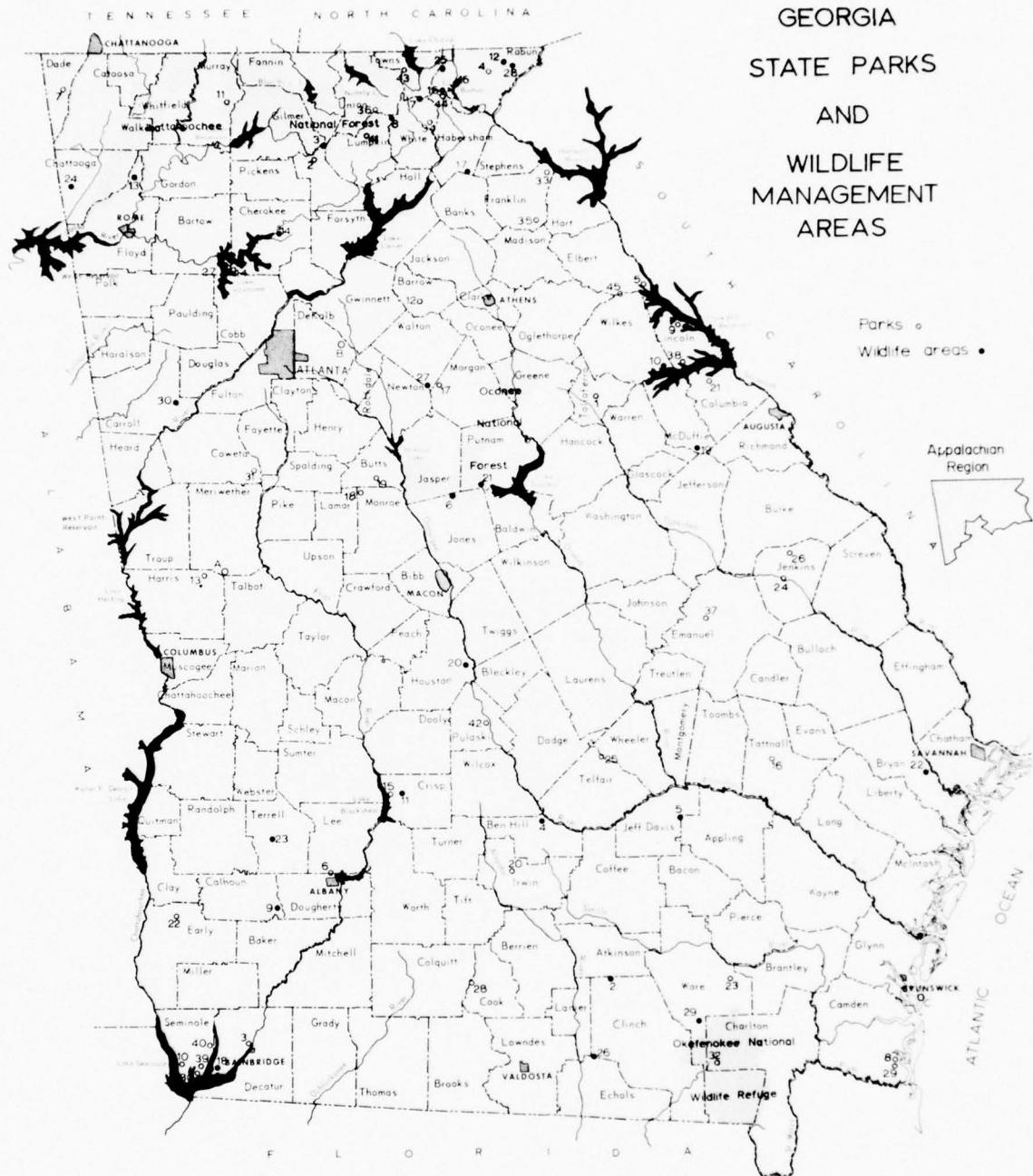


Figure 9

LAND AND WATER RESOURCE DEVELOPMENT PROJECTS

<u>Project and (Ownership)</u>	<u>Purpose</u>	<u>Location</u>	<u>Sub-basin</u>	<u>County</u>	<u>Area Acres</u>	<u>Storage Ac. ft.</u>	<u>Remarks</u>
<u>COOSA RIVER BASIN</u>							
Settingdown Creek PL534 (Flood Control Act of 1944)	FC	Etowah River	Forsyth Dawson Cherokee			6,098	Project includes 15 retarding dams
Noonday Creek PL534	FC	Etowah River	Cobb Cherokee			5,791	Project includes 13 retarding dams
Sharp Mountain Creek PL534	FC	Etowah River	Cherokee Pickens			8,694	Project includes 14 retarding dams
Pumpkivine Creek PL534	FC	Etowah River	Paulding Bartow			19,711	Project includes 18 retarding dams
⑧ Etowah River Reach PL534	FC	Etowah River	Lumpkin Dawson Forsyth Fannin Union			18,916	Project includes 14 retarding dams
Little River PL534	FC	Etowah River	Cherokee Fulton Forsyth Cobb			7,876	Project includes 14 retarding dams
Amicalola Creek PL534	FC	Etowah River	Dawson Lumpkin Pickens Cherokee Forsyth			3,409	Project includes 4 retarding dams
Raccoon Creek PL534	FC	Etowah River	Bartow Paulding Polk			11,192	Project includes 5 retarding dams

<u>Project and (Ownership)</u>	<u>Purpose</u>	<u>Location</u>	<u>Area</u>	<u>Storage</u>	<u>Remarks</u>
		<u>Sub-basin</u>	<u>County</u>	<u>Acres</u>	<u>Ac. ft.</u>
<u>COOSA RIVER BASIN</u> (Cont'd.)					
Cartecay River PL534	FC	Coosawattee River Oostanaula River	Gilmer Pickens	8,656	Project includes 7 regarding dams
Mountaintown Creek PL534	FC	Coosawattee River Oostanaula River	Gilmer	5,315	Project includes 4 regarding dams
Talking Rock Creek PL534	FC	Coosawattee River Oostanaula River	Gilmer Pickens Murray Gordon	7,235	Project includes 6 regarding dams
Stamp-Shoal Creeks PL534	FC	Etowah River	Cherokee Bartow Pickens	3,454	Project includes 2 regarding dams
Mill-Canton Creeks PL534	FC R	Etowah River	Cherokee	5,575	Project includes 8 regarding dams with 5,436 ac.ft of floodwater storage
Elliijay River PL534	FC	Coosawattee River Oostanaula River	Gilmer Fannin	8,576	Project includes 8 regarding dams
Long Swamp Creek PL534	FC	Etowah River	Pickens Cherokee Dawson	9,992	Project includes 6 regarding dams

<u>Project and Ownership</u>	<u>Purpose</u>	<u>Sub-basin</u>	<u>Location</u>	<u>County</u>	<u>Area Acres</u>	<u>Storage Ac. ft.</u>	<u>Remarks</u>
COOSA RIVER BASIN (Cont'd.)							
Allatoona Creek PL534	FC	Etowah River	Cobb Cherokee Bartow Paulding				
Big Cedar Creek PL566 & PL534	FC R	Coosa River	Polk Floyd (Alabama)		15,049		Project includes 11 retarding dams with 14,116 ac.ft. of floodwater storage
Euharlee Creek PL566 & PL534	FC R	Etowah River	Polk Floyd Bartow		15,724		Project includes 12 retarding dams with 15,158 ac.ft. of floodwater storage
82 Pine Log Tributary PL566 & PL534	FC R	Coosawattee River	Gordon Bartow Cherokee		24,500		Project includes 16 retarding dams with 24,140 ac.ft. of floodwater storage
Sallacoa Creek Area PL566 & PL534	FC R M&I	Coosawattee River Oostanaula River	Gordon Pickens Cherokee Bartow		20,165		Project includes 18 retarding dams with 19,431 ac.ft. of floodwater storage and 309 ac.ft. of storage for municipi- al and industrial water supply
Mill Creek PL566	FC M&I	Coahulla Creek Conasauga River Oostanaula River	Whitfield Walker		5,075		Project includes 5 retarding dams with 4,675 ac.ft. of floodwater storage and 4,00 ac. ft. of storage for municipal and industrial water supply
Allatoona Reservoir (U.S. Army Corps of Engineers)	FC P R	Etowah River	Bartow Cherokee Cobb		29,152		Project has an installed gener- ating capacity of 74,000 KW and a reservoir area at top of power pool of 11,860 acres. Develop- ments on reservoir include facil- ties for swimming, boating (27 ramps), and fishing. Project built 1944-1955

<u>Project and Ownership</u>	<u>Purpose</u>	<u>Location</u>	<u>Area</u>	<u>Storage</u>	<u>Remarks</u>
		<u>Sub-Basin</u>	<u>County</u>	<u>Acres</u>	<u>Ac. ft.</u>
COOSA RIVER BASIN (Cont'd.)					
Carters Reservoir (U.S. Army Corps of Engineers)	FC P R	Coosawattee River	Gilmer Murray	8,645	473,000 Project is under construction. It will include facilities for boating and fishing on a normal pool area of 3,220 acres
Amicalola Falls State Park	R	Etowah River	Dawson	264	Water area of 16 acres provides opportunity for fishing
Fort Mountain State Park	R	Conasauga River Oostanaula River	Murray	1,951	Park includes water area of 17 acres developed for swimming, boating, and fishing
George Washington Carver State Park	R	Etowah River	Bartow	345	Swimming, boating (1 ramp), and fishing on Allatoona Reservoir are provided
Red Top Mountain State Park	R	Etowah River	Bartow	1,457	Facilities provide for boating and fishing on Allatoona Reservoir
Lake Allatoona Public Hunting Area (Private and Federal ownership)	R F&W	Etowah River	Bartow Cherokee	28,000	Facility is managed by the Georgia Game and Fish Commission. Improvements provide opportunity for swimming and hunting on Allatoona Reservoir
Summerville Fish Hatchery (Georgia Game and Fish Commission)	F&W	Chattooga River	Chattooga	10	
Johns Mountain Wildlife Management Area (Private and Federal ownership)	F&W	Floyd Gordon Chattooga Walker		27,236	Facility is managed by the Georgia Game and Fish Commission. Area is developed for hunting and boating

<u>Project and (Ownership)</u>	<u>Purpose</u>	<u>Location</u>	<u>Area</u>	<u>Storage</u>	<u>Remarks</u>
		<u>Sub-basin</u>	<u>County</u>	<u>Acres</u>	<u>Ac. ft.</u>
TENNESSEE RIVER BASIN					
Head of Little Tennessee River PL566	FC R M&I	Little Tenn.	Rabun (North Carolina)	4,649	Project includes 5 retarding dams with storages of 4,065 and 252 ac.ft. for floodwater and municipal and industrial water supply, respectively
Hiawassee River	FC R	Towns		6,017	Project includes 2 retarding dams with floodwater storage of 5,876 ac.ft.
Hightower Creek PL566	FC	Hiawassee River	Towns	660	Project includes 4 retarding dams
Lake Blue Ridge (TVA) ♀	P R FC	Toccoa River	Fannin	3,570	186,300 Project features are: drainage area, 232 sq.mi.; reservoir area, 3,290 acres; installed capacity, 20,000 KW. Facilities provide opportunity for boating and fishing. Project built in 1931.
Lake Nottely	P R FC	Nottely River	Union	4,808	171,300 Project features are: drainage area, 214 sq.mi.; reservoir area, 4,180 acres; installed capacity, 15,000 KW. Facilities provide opportunity for boating and fishing. Project built in 1942
Lake Chatuge (TVA)	P R	Hiawassee River	Towns (North Carolina)	3,886	229,300 Project features are: drainage area, 189 sq.mi.; reservoir area, 2,572 acres; installed capacity, 10,000 KW. Facilities provide opportunity for boating, fishing, and swimming. Project built in 1942

<u>Project and Ownership</u>	<u>Purpose</u>	<u>Location</u>	<u>Area</u>	<u>Storage</u>	<u>Remarks</u>
		<u>Sub-basin</u>	<u>County</u>	<u>Acres</u>	<u>Ac. ft.</u>
TENNESSEE RIVER BASIN (Cont'd.)					
Vogel State Park	R	Nottely River	Union	226	Development includes a water area of 21 acres with facilities for swimming, boating, and fishing
Blue Ridge Wildlife Management Area (Chattahoochee National Forest)	F&W	Fannin		39,718	Facility is managed by Georgia Game and Fish Commission and provides opportunity for fishing and hunting
Swallow Creek Wildlife Management Area (Chattahoochee National Forest)	F&W R	Towns Rabun		9,000	Facility is managed by Georgia Game and Fish Commission and provides opportunity for fishing and hunting
Black Rock Mountain State Park	R	Little Tennessee River	Rabun		1,200
Cloudland Canyon State Park	R	Lookout Creek	Dade		1,380
Lake Chatuge State Park	R	Hiawassee River	Towns Rabun		15 13,000
Coleman River Wildlife Management Area (Chattahoochee National Forest)	F&W R				Facility is managed by Georgia Game and Fish Commission and provides opportunity for fishing and hunting
TALLAPOOSA RIVER BASIN					
Little Tallapoosa River PL566	FC M&I	Little Tallapoosa River	Carroll Haralson	13,867	Project includes 14 retarding dams with storage for floodwater and municipal and industrial water supply of 16,396 and 2,471 ac.ft., respectively

<u>Project and Ownership</u>	<u>Purpose</u>	<u>Location</u>	<u>Area</u>	<u>Storage</u>	<u>Remarks</u>
<u>Sub-basin</u>	<u>County</u>	<u>Acre</u>	<u>Ac.</u>	<u>ft.</u>	
TALLAPOOSA RIVER BASIN (Cont'd.)					
Lower Little Tallapoosa River PL566	FC R M&I	Little Tallapoosa River (Alabama)	133,472	46,489	Project includes 27 retarding dams (4 multipurpose). Reservoirs provide storage for floodwater and municipal and industrial water supply of 42,513 and 3,673 ac.ft., respectively
Little River PL566	FC M&I	Tallapoosa River Haralson	8,565	Project includes 6 retarding dams with storage of 8,445 and 120 ac.ft. for floodwater and municipal and industrial water supply, respectively	
SAVANNAH RIVER BASIN					
North Fork of Broad River Pilot Watershed	FC	North Broad River Broad River	40,598	5,788	Project includes 12 retarding dams with floodwater storage of 5,152 ac.ft. Construction begun in 1955 and completed in 1962
Middle Fork of Broad River PL566	FC	Broad River	50,829	7,693	Project includes 10 retarding dams with floodwater storage of 7,388 ac.ft. Construction started in 1963
North Broad River PL566	FC	Broad River	46,470	4,872	Project includes 8 retarding dams with floodwater storage of 4,209 ac.ft. Begun in 1961
Beaverdam Creek PL566	FC M&I	Beaverdam Creek Elbert	68,149	19,910	Project includes 10 dams (2 multipurpose). Reservoirs provide for storage of 16,249 ac.ft. for floodwater and 1,208 ft. for municipal and industrial water supply. Construction started in 1965

<u>Project and Ownership</u>	<u>Purpose</u>	<u>Location</u>		<u>Area Acres</u>	<u>Storage Ac. ft.</u>	<u>Remarks</u>
		<u>Sub-basin</u>	<u>County</u>			
SAVANNAH RIVER BASIN (Cont'd.)						
Grove River PL566	FC M&I	Hudson River Broad River	Banks Jackson Madison	55,600	17,635	Project includes 11 dams (1 multipurpose) with 14,061 ac.ft. storage for floodwater and 948 for municipal and industrial water supply. Construction started in 1966
South River PL566	FC	Broad River	Madison	59,875	14,270	Project includes 8 retarding dams with floodwater storage of 12,950 ac.ft. Construction started in 1962
South Fork Broad River PL566	FC M&I	Broad River	Madison Oglethorpe	92,990	16,266	Project includes 9 dams (2 multipurpose) with floodwater storage of 14,193 ac.ft. Construction started in 1966
South Fork Little River PL566	FC M&I	Little River	Greene Taliaferro	35,415	9,671	Project includes 5 retarding dams with a storage of 8,737 and 97 ac.ft. for floodwater and municipal and industrial water supply, respectively. Construction started in 1965
Rocky Creek PL566	FC	Little River	Wilkes	20,700		Project includes land treatment and 35,445 linear feet of channel improvements. Construction began in 1957 and completed in 1961
Lake Burton (Georgia Power Co.)	P R	Tallulah River	Rabun	2,775	87,000 (usable)	Project has a drainage area of 118 sq.mi.; gross power head of 114 ft.; and an installed capacity of 6,800 KW. Project operation provides some incidental flood control

Project and (Ownership)	Purpose	Location		Area Acres	Storage Ac. ft.	Remarks
		Sub-basin	County			
SAVANNAH RIVER BASIN (Cont'd.)						
Nacoochee Dam and Seed Reservoir (Georgia Power Co.)	P R	Tallulah River	Rabun	240		Project has a drainage area of 136 sq.mi.; gross power head of 63 ft.; and an installed capacity of 5,600 KW. Project built in 1926
Mathis-Terrora Proj. Lake Rabun (Georgia Power Co.)	P R	Tallulah River	Rabun	834		Project has a drainage area of 151 sq.mi.; gross power head of 190 ft.; and an installed capacity of 17,400 KW. Project built in 1925
Tallulah Falls (Georgia Power Co.)	P R	Tallulah River	Rabun Habersham	63		Project has a drainage area of 186 sq.mi.; gross power head of 608 ft.; and an installed capacity of 72,000 KW. Project built in 1913
Tugaloo Reservoir (Georgia Power Co.)	P R	Tugaloo River	Rabun (S.C.)	597		Project has a drainage area of 464 sq.mi.; gross power head of 144 ft.; and an installed capacity of 45,000 KW. Project built in 1923
Yonah Reservoir (Georgia Power Co.)	P	Tugaloo River	Stephens Habersham (S.C.)	325		Project has a drainage area of 470 sq.mi.; gross power head of 70 ft.; and an installed capacity of 25,000 KW.

<u>Project and (Ownership)</u>	<u>Purpose</u>	<u>Location</u>	<u>Area</u>	<u>Storage</u>	<u>Remarks</u>
		<u>Sub-basin</u>	<u>County</u>	<u>Acres</u>	<u>Ac. ft.</u>
SAVANNAH RIVER BASIN (Cont'd.)					
Hartwell Reservoir (U.S. Army Corps of Engineers)	FC P R Reg.	Stephens Franklin Hart (S. C.)			Project is located in Georgia and South Carolina. Reservoir areas in acres are - top of power pool, 55,950; top of flood control pool, 61,400. Capacity of reservoir at elev. 660, top of power pool is 2,549, 600 ac.ft. Storage capacity of 293,000 ac.ft. reserved for flood control above elevation 660. Generating capacity installed - initial, 264,000 KW; ultimate, 330,000 KW. Reservoir developments in Georgia include facilities for boating, fishing and other uses. Project constructed 1955-1962
Clark Hill Reservoir (U.S. Army Corps of Engineers)	FC R P Reg.	Elbert Lincoln McDuffie Columbia Wilkes (S. C.)			Project is located in Georgia and South Carolina. Areas of reservoir in acres are - top of power pool, 70,000; top of flood control pool, 78,500. Capacity of reservoir at top of power pool, elevation 330, is 2,510,000 ac.ft. Storage of 390,000 ac.ft. for flood control is reserved above elevation 330. Installed power generating capacity - 280,000 KW. Reservoir developments include facilities for boating, fishing, and other purposes. Project constructed 1946-1955.

<u>Project and Ownership</u>	<u>Purpose</u>	<u>Location</u>	<u>Area Acres</u>	<u>Storage Ac. ft.</u>	<u>Remarks</u>
		<u>Sub-basin</u>	<u>County</u>		
SAVANNAH RIVER BASIN (Cont'd.)					
Fort Pulaski National Monument (National Park Service)	R	Chatham	5,517		Development provides opportunity for boating, fishing, and hunting
Savannah National Wildlife Refuge (U.S. Fish & Wildlife Service)	R F&W	Chatham	5,765		Development has 1,095 acres in water and provides opportunity for boating, fishing, and hunting
New Savannah Bluff Lock and Dam (U.S. Army Corps of Engineers)	N R	Richmond (S.C.)	1,286		Navigation lock is 56x360 ft. with lift of 15 ft. Reservoir of about 1,250 acres provides opportunity for boating and fishing. Project built originally in 1937
Alexander H. Stephens Memorial State Park	R	Taliaferro	1,175		Small water area provides opportunity for boating
Bobby Brown Memorial State Park	R	Elbert	682		Park is located on Clark Hill Reservoir. Area is developed for swimming and provides opportunity for boating and fishing on Clark Hill Reservoir
Elijah Clarke Memorial State Park	R	Lincoln	447		Park is located on Clark Hill Reservoir. Area is developed for swimming and provides opportunity for boating and fishing on Clark Hill Reservoir

<u>Project and Ownership</u>	<u>Purpose</u>	<u>Location</u>	<u>Area Acres</u>	<u>Storage Ac. ft.</u>	<u>Remarks</u>
		<u>Sub-basin</u>	<u>County</u>		
SAVANNAH RIVER BASIN (Cont'd.)					
Keg Creek State Park	R	Columbia	867		Park is located on Clark Hill Reservoir. Area is developed for swimming and provides opportunity for boating and fishing on Clark Hill Reservoir
Mistletoe State Park	R	Columbia	2,032		Park is located on Clark Hill Reservoir and provides opportunity for boating, fishing, and hunting
Clark Hill Wildlife Management Area (U.S. Army Corps of Engineers)	F&W R	McDuffie Wilkes	10,000		Area, which is managed by the Georgia Game and Fish Commission, has opportunity for fishing and hunting
Lake Burton Fish Hatchery (Georgia Game and Fish Commission)	F&W R	Rabun	15		Project development includes facilities for boating on Lake Burton
Lake Burton Wildlife Management Area (Chattahoochee National Forest)	F&W R	Rabun	15,000		Project is managed by Georgia Game and Fish Commission
Lake Russell Wildlife Management Area (Private and Federal ownership)	F&W R	Habersham Stephens Banks	17,100		Project is managed by Georgia Game and Fish Commission. It includes facilities for swimming, fishing and hunting
McDuffie Public Fishing Area (Georgia Game and Fish Commission)	F&W R	McDuffie	416		Project development includes water area of 140 acres for boating and fishing

<u>Project and (Ownership)</u>	<u>Purpose</u>	<u>Location</u>	<u>Area Acres</u>	<u>Storage Ac. ft.</u>	<u>Remarks</u>
		<u>Sub-basin</u>	<u>County</u>		
SAVANNAH RIVER BASIN (Cont'd.)					
Warwoman Game Management Area (Chattahoochee National Forest)	F&W R	Rabun	14,000	1,761	Project area is managed by Georgia Game and Fish Commission. It includes developments for hunting and fishing
Tugaloo State Park	R	Franklin	397		
Victoria Bryant State Park	R	Franklin	97		
Moccasin Creek State Park	R	Rabun	181		
Nancy Hart State Park	R	Elbert	5		
CHATTahooCHEE RIVER BASIN					
Hazel Creek PL566	FC M&I	Soque River	Habersham	19,560	Project includes 4 dams (1 multi-purpose) with storages of 1,611 ac.ft. for floodwater and 150 for municipal and industrial water supply. Project built, 1961-1965
Sauvie Creek PL566	FC R	Sauvie Creek	White Habersham	20,000	Project includes 5 dams (1 multi-purpose) with a storage of 2,324 ac.ft. for floodwater. Project built, 1958-1962
Palmetto Creek PL566	FC	Mulberry Greek	Harris	13,450	Project includes 3 retarding dams with 2,599 ac.ft. of floodwater storage and 218 ac.ft. of sediment storage. It was started in 1960 and completed in 1963

<u>Project and (Ownership)</u>	<u>Purpose</u>	<u>Location</u>	<u>Area Acres</u>	<u>Storage Ac. ft.</u>	<u>Remarks</u>
		<u>Sub-basin</u>	<u>County</u>		
<u>CHATTAHOOCHEE RIVER BASIN (Cont'd.)</u>					
Bull Creek PL566	FC R	Bull Creek	Muscogee Harris	44,531	12,453 Project includes 11 retarding dams (1 multipurpose) with 11,331 ac.ft. of floodwater storage, 56 ac.ft. of recrea- tion storage, and 1,066 ac.ft. of sediment storage. The pro- ject was started in 1962
Langdale Dam (Georgia Power Co.)	P M&I	Harris (Alabama)		152	The maximum generating capacity of this project is 1,040 KW with a gross head of 14 ft. The pro- ject was built from 1924 to 1926. It has a drainage area of 3,600 sq.mi.
Riverview Dam (Georgia Power Co.)	P	Harris (Alabama)		75	The maximum generating capacity of this project is 600 KW. The project was built in 1918. It has a drainage area of 3,600 sq.mi.
Bartlett's Ferry Dam, Harding Reservoir (Georgia Power Co.)	P R	Harris (Alabama)		5,850	The maximum generating capacity of this project is 80,000 KW with a gross head of 115 ft. The reservoir includes 37,000 ac.ft. of usable storage. The project was built in 1926 and enlarged in 1928 and 1951. It has a drain- age area of 4,260 sq.mi.

<u>Project and (Ownership)</u>	<u>Purpose</u>	<u>Location</u>	<u>Area</u>	<u>Storage</u>	<u>Remarks</u>
		<u>Sub-Basin</u>	<u>County</u>	<u>Acres</u>	<u>Ac. ft.</u>
CHATTAHOOCHEE RIVER BASIN (Cont'd.)					
Goat Rock Dam and Reservoir (Georgia Power Co.)	P	Harris (Alabama)	940		The maximum generating capacity of this project is 29,000 KW with a gross head of 66 ft. The Project was built in 1912 and enlarged in 1915, 1920, 1955, 1956. It has a drainage area of 4,535 sq.mi.
Oliver Dam and Reservoir (Georgia Power Co.)	P M&I	Muscogee (Alabama)	2,150		The maximum generating capacity of this project is 60,000 KW with a gross head of 70 ft. The Project was built in 1959. It has a drainage area of 4,670 sq.mi.
North Highlands Dam and Reservoir (Georgia Power Co.)	P M&I	Muscogee (Alabama)	200		The maximum generating capacity of this project is 36,000 KW with a gross head of 38 ft. The Project was built in 1963. It has a drainage area of 4,670 sq.mi.
Morgan Falls Dam and Reservoir (Georgia Power Co.)	P Reg	Fulton Cobb	580	3,200	The maximum generating capacity of this project is 17,500 KW with a gross head of 52 ft. The Project was built in 1903 and has a drainage area of 1,340 sq.mi. It reregulates discharges from Buford Dam
Buford Dam Lake Lanier (U.S. Corps of Engineers)	FC R P Reg	Hall Dawson Forsyth Gwinnett	38,000	637,000 (flood control)	The maximum generating capacity of this project is 86,000 KW with a gross head of 193 ft. The Project was built from 1950 to 1957. It offers boating, swimming, and fishing

<u>Project and Ownership</u>	<u>Purpose</u>	<u>Location</u>	<u>Area</u>	<u>Storage</u>	<u>Remarks</u>
		<u>Sub-basin</u>	<u>County</u>	<u>Acres</u>	<u>Ac. ft.</u>
CHATTahoochee RIVER BASIN (Cont'd.)					
Walter F. George Dam, Lock, and Reservoir (U.S. Army Corps of Engineers)	P R N F&W	Chattahoochee Stewart Quitman Clay (Alabama)	45,000		The maximum generating capacity of this project is 130,000 KW. The project was built from 1955 to 1963. It includes an 82x450 ft. navigation lock with an 88 ft. lift. It offers swimming, boating, and fishing
West Point Dam and Reservoir (U.S. Army Corps of Engineers)	FC P R F&W Reg	Troup Heard (Alabama)	25,000		This project has been under construction since 1965
Woodruff Dam Lake Seminole (U.S. Army Corps of Engineers)	P R N	Decatur Seminole (Alabama)	37,500		The maximum generating capacity of this project is 30,000 KW. The project was built from 1947 to 1957. It includes an 82x450 ft. navigation lock with a 33 ft. lift. It offers swimming, boating, and fishing
Columbia Lock and Dam and Reservoir (U.S. Army Corps of Engineers)	N	Early (Ala.)	1,570		This project was built from 1959 to 1963. It includes an 82x450 ft. navigation lock with a 25 ft. lift. It offers boating and fishing
Eufaula National Wildlife Refuge (U.S. Fish and Wildlife Service)	R F&W	Quitman Stewart	5,836		This refuge is located on Walter F. George Reservoir. It offers boating, fishing, and hunting

<u>Project and Ownership</u>	<u>Purpose</u>	<u>Location</u>		<u>Area</u>	<u>Storage</u>	<u>Remarks</u>
		<u>Sub-basin</u>	<u>County</u>	<u>Acres</u>	<u>Ac. ft.</u>	
<u>CHATTahoochee RIVER BASIN (Cont'd.)</u>						
Fairchild State Park	R	Seminole	Seminole	309	Park is located on Lake Seminole. It has facilities for boating (1 ramp), swimming, and fishing	
Franklin D. Roosevelt State Park	R	Harris	Harris	4,951	Park includes 43 acres of water and 5 of wetlands. It offers boating and fishing	
Kolomoki Mounds State Park	R	Early			Park includes 80 acres of water and 10 of wetlands. It offers swimming, boating, and fishing	
Unicoi State Park	R	White	White	278	Park includes 50 acres of water. It offers swimming, boating, and fishing	
Chestattee Wildlife Management Area (Chattahoochee National Forest)	F&W R	Lumpkin Union White		24,956	Area is managed by the Georgia Game and Fish Commission for fishing and hunting	
Whitesburg Public Hunting Area (Georgia Kraft Co.)	F&W R	Carroll Douglas		26,000	Area is managed by the Georgia Game and Fish Commission for hunting	
Lake Lanier Islands (U.S. Army Corps of Engineers leased by Lake Lanier Island Development Authority)	R				The development of this area is being planned by the Lake Lanier Islands Development Authority	
Blackburn State Park	R	Lumpkin				193

<u>Project and Ownership</u>	<u>Purpose</u>	<u>Location</u>	<u>Area Acres</u>	<u>Storage Ac. ft.</u>	<u>Remarks</u>
		<u>Sub-basin</u>	<u>County</u>		
CHATTAHOOCHEE RIVER BASIN (Cont'd.)					
Chattahoochee Wildlife Management Area (Chattahoochee National Forest)	F&W R		21,503		Area is managed by the Georgia Game and Fish Commission for fishing and hunting. It is located in both the Chattahoochee and Tennessee basins
Potato Creek PL566	FC	Potato Creek Flint River	Upson Pike Lamar Spalding	154,000	12,879 Project includes 9 retarding dams (1 multipurpose) and provides 11,745 ac.ft. of flood-water storage, 53 ac.ft. of irrigation water supply storage, and 1,081 ac.ft. of sediment storage. It was begun in 1960
Cane Creek PL566	FC R M&I	Cane Creek Flint River	Meriwether	40,037	5,022 Project includes 4 structures (1 multipurpose) and provides 3,269 ac.ft. of floodwater storage, 881 ac.ft. of recreation storage, 207 ac.ft. of municipal and industrial water supply storage, and 665 ac.ft. of sediment storage. It was begun in 1964
Dry Creek PL566	FC D	Spring Creek Flint River	Seminole Miller Early	31,385	Project includes channel improvement but no retarding dams. It was begun in 1964
Pennahatchee Creek PL566	FC D	Pennahatchee Creek Flint River	Dooly	67,197	Project includes channel improvements but no retarding dams. It was begun in 1965

<u>Project and Ownership</u>	<u>Purpose</u>	<u>Location</u>	<u>Area Acres</u>	<u>Storage Ac. ft.</u>	<u>Remarks</u>
		<u>Sub-basin</u>	<u>County</u>		
CHATTAHOOCHEE RIVER BASIN (Cont'd.)					
Flint River and Lakeworth Reservoirs (Georgia Power Co.)	P	Flint River	Dougherty Lee	2,491	Maximum generating capacity of this project is 6,600 KW with a gross head of 27 ft. It was built in 1921 and 25 and has a drainage area of 5,150 sq.mi.
Warwick Dam and Lake Blackshear (Crisp County Power Authority)	R	Flint River	Crisp Sumter Lee	6	Park is located on Lake Seminole and has facilities for boating and fishing
Bainbridge State Park	R	Flint River	Decatur	587	Park has boating facilities
98 Chehaw State Park	R	Flint River	Lee Dougherty	1,307	Park is located on Lake Black-shear and has facilities for boating, fishing, and swimming
Georgia Veterans Memorial State Park	R	Flint River	Crisp	295	Park is located on Lake Seminole and has facilities for boating (1 ramp) and swimming
Seminole County State Park	R	Chattahoochee River	Seminole	760	Park is located on Lake Seminole and has facilities for fishing
Spring Creek State Park	R	Spring Creek	Decatur Seminole	26,000	Area is managed by the Georgia Game and Fish Commission for fishing and hunting
Chickasawhatchie Wildlife Management Area (St. Joe Paper Co.)	F&W R	Calhoun Dougherty			

<u>Project and Ownership</u>	<u>Purpose</u>	<u>Location</u>	<u>Sub-basin</u>	<u>County</u>	<u>Area Acres</u>	<u>Storage Ac. ft.</u>	<u>Remarks</u>
<u>CHATTAHOOCHEE RIVER BASIN (Cont'd.)</u>							
Cordelle Fish Hatchery (Georgia Game and Fish Commission)	F&W R	Flint River	Crisp		90		Boating and fishing are permitted on some of the 50 acres of water at this hatchery
Lake Seminole Waterfowl Hunting Area (U.S. Army Corps of Engineers and private ownership)	F&W R		Decatur		3,700		Area is located on Lake Seminole. It is managed by the Georgia Game and Fish Commission for fishing and hunting
Steve Cocco Fish Hatchery (Georgia Game and Fish Commission)	F&W	Flint River	Terrell		54		This hatchery includes 14 acres of water
Senoia State Park	R	Flint River	Coweta		10		
<u>ALTAMAHAA RIVER BASIN</u>							
Middle Oconee-Walnut Creek PL566	FC M&I	Middle Oconee River	Hall Jackson Oconee River		91,700	25,281	Project includes 20 retarding dams (1 multipurpose) which provides 22,352 ac.ft. of floodwater storage, 450 ac.ft. of municipal and industrial water supply storage, and 2,479 ac.ft. of sediment storage. It was begun in 1964
Barber Creek PL566	FC	Middle Oconee River	Barrow Oconee Oconee River		26,899	2,517	Project includes 4 retarding dams which provide 2,109 ac.ft. of floodwater storage and 408 ac.ft. of sediment storage. It was built from 1958 to 1965

<u>Project and Ownership</u>	<u>Purpose</u>	<u>Location</u>	<u>Area Acres</u>	<u>Storage Ac. ft.</u>	<u>Remarks</u>
		<u>Sub-basin</u>	<u>County</u>		
ALTamaha RIVER BASIN (Cont'd.)					
Marbury Creek PL566	FC M&I F&W	Apalachee River Oconee River	Barrow Oconee	16,394	7,070
					Project includes 3 retarding dams (1 multipurpose) which provide 3,591 ac.ft. of floodwater storage, 1,200 ac.ft. of municipal and industrial water supply storage, and 361 ac.ft. of sediment storage. It was begun in 1963
Haynes Creek-Brushy Fork PL566	FC	Yellow River Ocmulgee River	Gwinnett Walton Newton	20,000	1,683
Bear Creek PL566	FC	Yellow River Ocmulgee River	Newton	23,324	Project includes 4 retarding dams which provide 1,462 ac.ft. of floodwater storage and 221 ac.ft. of sediment storage. It was built from 1962 to 1967
Rooty Creek PL566	FC	Oconee River	Putnam	29,483	2,445
Fishing Creek PL566	FC I	Oconee River	Baldwin Jones	41,000	10,046
					Project includes channel improvement but no retarding dams. It was built from 1957 to 1960
					Project includes 5 retarding dams which provide 2,174 ac.ft. of floodwater storage and 241 ac.ft. of sediment storage. It was built from 1958 to 1966
					Project includes 8 retarding dams (1 multipurpose) which provide 9,104 ac.ft. floodwater storage, 250 ac.ft. irrigation water supply storage, and 692 ac.ft. sediment storage. It was begun in 1964

<u>Project and (Ownership)</u>	<u>Purpose</u>	<u>Location</u>	<u>Area</u>	<u>Storage</u>	<u>Remarks</u>	
		<u>Sub-basin</u>	<u>County</u>	<u>Acres</u>	<u>Ac. ft.</u>	
<u>ALTAMAHAA RIVER BASIN (Cont'd.)</u>						
Tobesofkee Creek PL566	FC M&I F&W	Ocmulgee River	Lamar Monroe Bibb	137,029	31,421	Project includes 3 retarding dams (1 multipurpose) which provide 5,797 ac.ft. of floodwater storage, 3,500 ac.ft. municipal and industrial water supply storage, and 21,000 ac.ft. fish and wildlife storage. It was begun in 1960
Sandy Creek PL566	FC	N. Oconee River	Jackson Madison	21,000	3,769	Project includes 6 retarding dams which provide 3,341 ac.ft. of floodwater storage and 428 ac.ft. of sediment storage. It was begun in 1961
Little Sandy Creek-Trail Creek PL566	FC R	Oconee River	Clark	27,276	9,668	Project includes 6 retarding dams (1 multipurpose) which provide 7,789 ac.ft. of floodwater storage and 1,879 ac.ft. of sediment storage. It was begun in 1967
Barnett Shoals Dam (Georgia Power Co.)	P R	Oconee River	Oconee	95		Maximum generating capacity is 2,800 KW with a gross head of 50 ft. The project was built in 1910 and has a drainage area of 797 sq.mi.
Sinclair Dam and Reservoir (Georgia Power Co.)	P R	Oconee River	Baldwin Putnam Hancock Jones	15,330		Maximum generating capacity is 45,000 KW with a gross head of 92 ft. and usable storage of 111,000 ac.ft. The project was built in 1953 and has a drainage area of 2,910 sq.mi.

<u>Project and Ownership</u>	<u>Purpose</u>	<u>Sub-basin</u>	<u>Location</u>	<u>County</u>	<u>Area Acres</u>	<u>Storage Ac. ft.</u>	<u>Remarks</u>
ALTAMAHAA RIVER BASIN (Cont'd.)							
Lloyd Shoals Dam Jackson Lake (Georgia Power Co.)	P R	Ocmulgee River	Jasper Butts Henry Newton		4,750		Maximum generating capacity is 22,500 KW with a gross head of 102 ft. The project was built in 1911, 16, and 17 and has a drainage area of 1,300 sq.mi.
Piedmont National Wildlife Refuge (U.S. Fish and Wildlife Service)	F&W R	Ocmulgee River	Jones Jasper		33,276		Fishing and hunting are available. The refuge includes 250 acres of water
Fort Yargo State Park	R	Apalachee Riv. Barrow Oconee River			1,680		Fishing is available. The park includes 240 acres of wetlands
Gordonia-Altamahaa State Park	R	Ohoopee River	Tattnall		120		Boating and fishing are available. The park includes 16 acres of water
Hard Labor Creek State Park	R	Apalachee Riv. Morgan Oconee River			5,805		Swimming and fishing are available
High Falls State Park	R	Towaliga River Monroe Ocmulgee River			750		Boating (6 ramps)and fishing are available. The park includes a 650-acre lake
Indian Springs State Park	R	Ocmulgee River	Butts		510		Boating and fishing are available. The park includes 105 acres of water
Little Ocmulgee State Park	R	Little Ocmul- gee River	Telfair Wheeler		1,397		Swimming, boating, and fishing are available. The park includes 181 acres of water and 100 acres of wetlands

Project and Ownership	Purpose	Location		Area Acres	Storage Ac. ft.	Remarks
		Sub-basin	County			
ALIAMAHA RIVER BASIN (Cont'd.)						
Altamaha Waterfowl Public Hunting Area (Georgia Game and Fish Commission)	F&W R	McIntosh		30,000		Boating, fishing, and hunting are available. The area includes 11,000 acres of wetlands
Bowen Mill Fish Hatchery (Georgia Game and Fish Commission)	F&W	Ocmulgee River Ben Hill		70		Hatchery has 30 acres of water
Bullard Creek Wildlife Management Area (Continental Can Co.)	F&W R	Appling Jeff Davis		18,000		Area managed by Georgia Game and Fish Commission for hunting
Oaky Woods Wildlife Management Area (Georgia Kraft Co.)	F&W R	Houston		37,000		Area managed by Georgia Game and Fish Commission for hunting
Piedmont Experiment Station Game Management Area (Coop. Extension Service)	F&W R	Putnam		15,000		Area managed by Georgia Game and Fish Commission for fishing and hunting
Walton County Fish Hatchery (Georgia Game and Fish Commission)	F&W	Little River Ocoee River	Walton	25		Hatchery has 12 acres of water
Stone Mountain Memorial Park (Stone Mountain Memorial Association)	R	Yellow River Ocmulgee River	DeKalb Gwinnett	3,600		Park includes 462 acres of water and provides boating and fishing
Hawkinsville State Park	R	Ocmulgee River	Pulaski	19		Park includes 462 acres of water and provides boating and fishing
Cedar Creek Wildlife Management Area (Private and Federal ownership)	F&W R	Jones Jasper		38,982		Area managed by Georgia Game and Fish Commission for hunting

Project and (Ownership)	Purpose	Location		Area Acres	Storage Ac. ft.	Remarks
		Sub-basin	County			
<u>ATLANTIC RIVER BASIN (Cont'd.)</u>						
Van Grandy State Park	R	Ohoopee River	Emmanuel	6,400		
<u>OGEECHEE RIVER BASIN</u>						
Rocky Comfort Creek PL566	FC M&I I	Rocky Creek	Warren Glascock	51,300	9,275	Project includes 4 retarding dams (3 multipurpose) which provide 7,180 ac. ft. of flood-water supply storage, 459 ac. ft. irrigation storage, and 486 ac. ft. sediment storage. It was begun in 1962
Fort Lawton-Little Buckhead Creek PL566	FC R M&I	Little Buck-head Creek	Jenkins Burke	36,945	1,912	Project includes 1 multipurpose dam which provides 1,772 ac. ft. of floodwater storage and 140 ac. ft. of sediment storage. It was begun in 1966
Mill Creek PL566	FC D	Black Creek	Bryan Bulloch	39,652		Project includes channel improvement only. It was begun in 1965
Blackbeard Island National Wildlife Refuge (U.S. Fish and Wildlife Service)	F&W R		McIntosh	5,617		Fishing and hunting are available. Refuge includes 580 acres of water and 2,000 acres of wetlands
Harris Neck National Wildlife Refuge (U.S. Fish and Wildlife Service)	F&W R		McIntosh	2,687		Refuge includes developments for recreation and fishing
Lincoln State Park	R		Jenkins	52		Park improvements include facilities for swimming

<u>Project and Ownership</u>	<u>Purpose</u>	<u>Location</u>	<u>Area Acres</u>	<u>Storage Ac. ft.</u>	<u>Remarks</u>
		<u>Sub-basin</u>	<u>County</u>		
<u>OCECHEE RIVER BASIN (Cont'd.)</u>					
National Springs State Park	R	Jenkins	1,055		Park improvements include boating and swimming facilities
Richmond Hill Fish Hatchery (Georgia Game and Fish Commission)	F&W	Bryan	50		
<u>SATILLA RIVER BASIN</u>					
Bishop Creek PL566	I F&W D	Little Satilla Appling River	27,840	1,614	Project includes 7 dams and reservoirs, 2 for fish and wildlife and 5 for irrigation water supply storage with storage of 1,481 and 84 ac.ft. for fish and wildlife and irrigation, respectively. Project construction begun in 1963
Little Satilla Creek PL566	FC R I D	Little Satilla Wayne River	109,500	1,215	Project includes 4 dams and reservoirs (2 multipurpose) which provide 34 ac.ft. flood-water storage and 658 ac.ft. water supply storage for irrigation. Project construction begun in 1962
Turtle River PL566	FC D	Turtle River	Glynn Brantley Wayne	151,621	Project includes 625,346 linear ft. of channel improvements and 55,000 linear ft. of dike. Construction begun in 1965

<u>Project and (Ownership)</u>	<u>Purpose</u>	<u>Location</u>	<u>Area</u>	<u>Storage</u>	<u>Remarks</u>
		<u>Sub-basin</u>	<u>County</u>	<u>Acres</u>	<u>Ac. ft.</u>
SATILLA RIVER BASIN (Cont'd.)					
Laura S. Walker State Park (Waycross State Forest)	R	Ware	306	Project developments include 106 acres of water for boating and fishing	
Arabia Bay Wildlife Management Area (International Paper Co. & Alex Sessions)	F&W R	Atkinson Clinch	45,000	Project is managed by Georgia Game and Fish Commission. It provides opportunity for fishing and hunting	
Jekyll Island State Park	R	Glynn	50,160	Park is developed intensively for recreation particularly the natural beaches. Facilities are provided for indoor swimming and other recreational activities	
Waycross State Forest	F&W R F	Ware	34,500	Area is located in both the Satilla and Suwannee basins. It is managed to provide opportunities for recreational activities	
ST. MARYS RIVER BASIN					
Crooked River State Park	R	Camden	500	Park is developed and managed to provide opportunities for boating, fishing, and hunting	
Santa Maria State Park	R	Camden	66		

<u>Project and Ownership</u>	<u>Purpose</u>	<u>Location</u>	<u>Area Acres</u>	<u>Storage ac. ft.</u>	<u>Remarks</u>
		<u>Sub-basin</u>	<u>County</u>		
SUNBANEE RIVER BASIN					
Okefenokee National Wildlife Refuge (U.S. Fish and Wildlife Service)	F&W R	Charlton Ware Clinch	341,000		Almost 296,000 acres of the refuge is under water. The unique natural features of the Okefenokee Swamp provide excellent opportunities for recreational and sight-seeing activity. Boating, fishing, and hunting are permitted in the refuge
Reed Bingham State Park	R	Little River Withlacoochee River	Cook Colquitt	1,613	A water area of 400 acres in the park is developed for swimming, boating, and fishing
Stephen C. Foster State Park	R		Charlton	80	Developments include facilities for recreational activities and fishing in the Okefenokee Swamp
Suwanoochee Wildlife Management Area (Langdale Co.)	F&W R		Clinch Echols Lanier	60,000	The area is managed by Georgia Game and Fish Commission for fishing, hunting, and recreational activities
Jefferson Davis State Park	R	Alapaha River	Irwin	13	
Waycross State Forest Wildlife Management Area (Georgia Forestry Commission)	F&W R		Ware	37,500	Developments in the area include provisions for fishing and hunting

<u>Project and Ownership</u>	<u>Purpose</u>	<u>Location</u>	<u>Area</u>	<u>Storage</u>	<u>Remarks</u>
		<u>Sub-basin</u>	<u>County</u>	<u>Acres</u>	<u>Ac. ft.</u>
OCHLOCKONEE RIVER BASIN					
Bridge Creek-Ochlockonee PL566	I R M&I	Ochlockonee River	Thomas Colquitt Worth	158,506	Project includes 61 reservoirs for irrigation water supply and 3 multipurpose reservoirs for irrigation and recreation. Con- struction of project begun in 1967

AUCILLA RIVER BASIN

(No projects recorded)

APPENDIX C

BIBLIOGRAPHY

I. Water Law

The Code of Georgia of 1933, adopted March 24, 1933, effective January 1, 1935, State of Georgia, Atlanta.

Code of Georgia Annotated, The Harrison Company, Atlanta, 36 vols. [Ga. Code Ann.]

Acts and Resolutions of the Georgia Assembly of the State of Georgia, State of Georgia, Atlanta [Ga. Laws].

Georgia Supreme Court Reports, State of Georgia, Atlanta.

Georgia Appeals Reports, State of Georgia, Atlanta.

Official Compilation Rules and Regulations of the State of Georgia, State of Georgia, Atlanta, 6 vols., 1967.

A Study of the Riparian and Prior Appropriation Doctrines of Water Laws with Particular Reference to the Situation in Georgia, Institute of Law and Government, School of Law, University of Georgia, 1955, 204 pp.

William H. Agnor, "Riparian Rights in Georgia", Georgia Bar Journal, Volume XVIII, No. 4, May 1956.

Shannonhouse, Royal G., "Common Law Rules Regarding the Use of Surface and Ground Water in the Southeastern States", Water Law and Policy in the Southeast, Institute of Law and Government, University of Georgia, Athens, 1962, pp. 6-23.

II. Department of Mines, Mining and Geology

A. Bulletins

3. The Water-Powers of Georgia, C. C. Anderson and B. M. Hall, 1896, 150 pp., out of print.
7. Artesian-Well System of Georgia, S. W. McCallie, 1898, 214 pp., \$2.00.
15. Underground Waters of Georgia, S. W. McCallie, 1908, 376 pp., \$2.00.
16. Water-Powers of Georgia, 2nd report, B. M. Hall and M. R. Hall, 1908, 424 pp., \$1.50.
20. Mineral Springs of Georgia, S. W. McCallie, 1913, 190 pp., \$1.00

25. Drainage Investigations in Georgia, S. W. McCallie and U. S. Department of Agriculture, 1911, 123 pp., \$1.00.
32. Agricultural Drainage in Georgia, J. E. Brantly and U. S. Department of Agriculture, 1917, 117 pp., \$2.00.
38. Water-Powers of Georgia, 3rd report, B. M. Hall and M. R. Hall, 1921, 316 pp., \$2.00.
49. Artesian Water in Southeastern Georgia, with Special Reference to the Coastal Area--Well Records, M. A. Warren, 1945, 83 pp., \$1.00.
- 49A. Artesian Water in Southeastern Georgia, with Special Reference to the Coastal Area--Well Records, M. A. Warren, 1945, 83 pp., \$1.00.
52. Geology and Ground-Water Resources of the Coastal Plain of East-Central Georgia, Philip E. LaMoreaux, 1946, 173 pp., out of print.
55. Geology and Ground-Water Resources of the Atlanta Area, Georgia, S. M. Herrick and H. E. LeGrand, 1949, 124 pp., \$1.50.
64. Geology and Ground-Water Resources of Central East Georgia, A. S. Furcron and H. E. LeGrand, 1956, 164 pp., \$1.50.
65. The Availability and Use of Water in Georgia, M. T. Thomson, S. M. Herrick, Eugene Brown and others, 1956, 316 pp., \$2.50.
69. Reconnaissance of Chemical Quality of Georgia Streams, R. N. Cherry, 1961, 100 pp., \$2.00.
70. Well Logs of the Coastal Plain of Georgia, Stephen M. Herrick, 1961, 470 pp., \$5.00.
72. Geology and Ground-water Resources of the Macon Area, Georgia, H. E. LeGrand, 1962, 68 pp., \$2.00.
73. Effect of a Severe Drought, 1954, on Stream Flow in Georgia, M. T. Thomson and R. F. Carter, 1963, 98 pp., \$2.50.

B. Information Circulars

8. Water, Georgia's Unknown Natural Resource, R. W. Smith, 1936, \$0.50.

16. The Characteristics of Georgia's Water Resources and Factors Related to Their Use and Control, Garland Peyton, 1954, \$0.50.
17. Surface Water Resources of Georgia During the Drought of 1954, Part I, Streamflow, M. T. Thomson and R. F. Carter, 1955, \$1.00.
18. Source and Quality of Ground Water in Southwestern Georgia, Robert L. Wait, 1960, \$1.00.
20. Relation of Salty Ground Water to Fresh Artesian Water in the Brunswick Area, Glynn County, Georgia, J. W. Stewart, 1960, \$1.00.
21. Streamflow Maps of Georgia's Major Rivers, M. T. Thomson, 1960, \$1.00.
23. Interim Report on Test Drilling and Water Sampling in the Brunswick Area, Glynn County, Georgia, R. L. Wait, 1962, \$1.00.
24. Geology and Ground-Water Resources of Mitchell County, Georgia, Vaux Owen, Jr., 1963, \$1.00.
26. Geology and Ground-Water Resources of Dade County, Georgia, M. G. Croft, 1964, \$1.00.
27. Geology and Ground-Water Resources of the Paleozoic Rock Area, Chattooga County, Georgia, C. W. Cressler, 1964, \$1.00.
28. Geology and Ground-Water Resources of Catoosa County, Georgia, C. W. Cressler, 1963, \$1.00.
29. Geology and Ground-Water Resources of Walker County, Georgia, C. W. Cressler, 1964, \$1.00.

C. Special Publication

1. Emergency Water Supplies for the Atlanta Area in a National Emergency, J. W. Stewart and S. M. Herrick, 1963.

III. Georgia Water Quality Control Board

A. Annual Reports

First 1965
Second 1966

B. Technical Reports

Water Quality of Tobeofkee Creek, 1966.

Water Quality Study of Chatham County Waters, 1966,
John M. Henderson.

IV. State Planning Bureau

Inventory of Public Outdoor Recreation Areas, 1967.

V. Other

U. S. Study Commission--Southeast River Basins, Plan for Development of the Land and Water Resources of the Southeast River Basins, 1963.

Basic Data and Research, Southeast River Basins, Report of Subcommittee on Basic Data and Research for the Southeast Basins Inter-Agency Committee, April 1966.

Ingols, R. S., and G. I. Whitlatch, Stream Pollution in the Coosa Valley of Northwest Georgia, Industrial Development Division, Engineering Experiment Station, Georgia Institute of Technology, Atlanta, 1963.

Whitlatch, G. I. (compiler), Summary of the Industrial Water Resources of Georgia, Special Report No. 44, Engineering Experiment Station, Georgia Institute of Technology, Atlanta, June 1964.

Georgia Conservation Needs Committee, Georgia Soil and Water Conservation Needs Inventory, Georgia State Soil Conservation Committee, Athens, 1962.

MISSISSIPPI LAWS, POLICIES AND PROGRAMS
PERTAINING TO
WATER AND RELATED LAND RESOURCES

Prepared by the Pat Harrison Waterway District

ROLE OF THE STATE OF MISSISSIPPI
IN THE PLANNING AND DEVELOPMENT OF THE WATER AND RELATED
LAND RESOURCES IN THE PASCAGOULA RIVER BASIN

Foreword

Due to the increased emphasis upon comprehensive and coordinated planning, there is a need for a better and more complete understanding of the role of the State in the development and management of water and related land resources. This role depends largely on the laws and programs of the State. The purpose of this Report is to identify laws and programs of the State of Mississippi, relating to the development of water and related land resources and to show the role of the State in the comprehensive study of the Pascagoula River Basin.

This report was prepared by the Pat Harrison Waterway District.

The completeness of this element of the Appalachian Water Resources Study Report is due to the generosity of Mr. Swep Davis, Executive Secretary of the Pat Harrison Waterway District.

TABLE OF CONTENTS

STATE OF MISSISSIPPI

	<u>Page</u>
SECTION I - STATE LAWS, POLICIES, AND PROGRAMS PERTAINING TO WATER AND RELATED RESOURCES	
INTRODUCTION	1
WATER RIGHTS	2
Doctrine	2
Surface Water	2
Ground Water	4
Access to Lakes and Streams	4
Diversion Between Basins	4
Eminent Domain	5
REGULATORY AUTHORITY	8
Permits or Approval Required	8
For drilling or abandoning wells	8
For impoundments	8
For channel encroachments	9
For developments in flood plains	9
For discharge of waste	10
For construction of public water supply	11
Water Quality	12
Waste treatment	12
Flow regulation	12
SECTION II - ADMINISTRATIVE STRUCTURE	
INTRODUCTION	13
SECTION III - STATE AGENCIES, POLITICAL SUBDIVISIONS, SPECIAL PURPOSE DISTRICTS AND THEIR ROLES IN THE DEVELOPMENT OF THE WATER RESOURCES OF THE PASCAGOULA RIVER BASIN	
INTRODUCTION	15
PAT HARRISON WATERWAY DISTRICT	16
BOARD OF WATER COMMISSIONERS	25
STATE AIR AND WATER POLLUTION CONTROL COMMISSION	27
STATE BOARD OF HEALTH	28
STATE GAME AND FISH COMMISSION	29

TABLE OF CONTENTS (Cont'd.)

	<u>Page</u>
SECTION III, INTRODUCTION (Cont'd.)	
MISSISSIPPI PARK SYSTEM	31
MISSISSIPPI RESEARCH AND DEVELOPMENT CENTER	32
MISSISSIPPI FORESTRY COMMISSION	33
WATER RESOURCES RESEARCH INSTITUTE	35
MISSISSIPPI AGRICULTURAL AND INDUSTRIAL BOARD	38
MISSISSIPPI GEOLOGICAL SURVEY BOARD	39
STATE HIGHWAY COMMISSION	40
MASTER WATER MANAGEMENT DISTRICTS	41
WATER MANAGEMENT DISTRICTS	42
DRAINAGE DISTRICTS	43
SWAMP LAND DISTRICTS	44
FLOOD CONTROL DISTRICTS	45
PORT COMMISSIONS	46
STATE SOIL CONSERVATION COMMITTEE	48
SECTION IV - RECOMMENDATION FOR COMPREHENSIVE STUDY OF THE STATE STATUTES AND THE ROLES OF THE SEVERAL ORGANIZATIONS AND AGENCIES	
RECOMMENDATIONS	49

TABLES AND CHART

<u>Table No.</u>		<u>Page No.</u>
I	Pascagoula River Basin, Summary of Pertinent Data for Pat Harrison Waterway District's Portion of Proposed Early-Action Plan	19
II	Pascagoula River Basin, Costs for Pat Harrison Waterway District Proposed Early-Action Plan	21
III	Pascagoula River Basin, Preliminary Economic Analysis for Pat Harrison Waterway District's Portion of Proposed Early-Action Plan	22
<u>Chart No.</u>		
I	Agencies and Administrative Structures that Work with Water Resources in Mississippi	14

EXHIBITS

<u>Exhibit No.</u>		<u>Page No.</u>
A	Mississippi Statute Reference	50
B	By-Laws of the Pat Harrison Waterway District	53
C	General Policy of Pat Harrison Waterway District Pertaining to Public Reservoirs	57
D	Pascagoula River Basin - Developments Proposed and Under Construction by the U. S. Corps of Engineers and the Pat Harrison Waterway District and the Department of Agriculture, and Drainage Districts, Water Manage- ment Districts, and Master Water Management Districts in the Pascagoula River Basin	60
E	Temporary Minimum Standards Applicable to All Surface Waters in the State of Mississippi	61
F	Lakes in the Pascagoula River Basin Owned by the State Game and Fish Commission	63

Preceding Page BLANK - ^{NOT} FILMED

INTRODUCTION

Mississippi considers water one of its most valuable resources and has long recognized the need to provide for its development. Development has called for certain controls over its use, as provided by the Constitution of the State and by the Mississippi Code. The Constitution and the Code contain laws that pertain to water rights and to regulatory authority over water and rights to water. They further provide for the establishment of the several state agencies whose activities have impact upon the development and use of the State's water resources.

The pertinent sections of the law are scattered throughout the Constitution and the Code. This part of Appendix N gathers together these sections to provide a description of these water resources regulations. Code and Constitution references for each point in the appendix are summarized in tabular form as Exhibit A.

I. WATER RIGHTS

The right to use water, both surface and ground, is the primary point of impact of regulation of water resource development and of its control. In the world today, it is mandatory that the right to use water be controlled wisely, not only in the interest of the present but also in the developments of the future. Regulation of water rights in Mississippi is not only extended to quantity of use but is also extended to the effects of use upon quality. Furthermore, the Constitution and the Code include regulations that recognize that rights made available to one user may have substantial effects upon other persons. Provisions relate to water rights doctrine, surface and ground water, access to lakes and streams, diversion between basins, and the exercise of the right of eminent domain.

A. Doctrine

Sections 5956.01 and 5956.04 of the Mississippi Code clearly establish the doctrine for surface water rights; however, the doctrine with regard to rights to ground water is not specifically given in the Code.

Section 5956.01 declares that the general welfare of the people of the State of Mississippi requires that the water resources of the State be put to beneficial use to the fullest extent and that the waste and unreasonable method of use of water be prevented. It also provides that the conservation of such water be exercised by the reasonable and beneficial use thereof in the interest of the people. Water occurring in any watercourse, lake or other natural water body of the State, is declared to be among the basic resources subject to appropriation in accordance with the provisions of the Code. The control, development, and use of water for all beneficial purposes is with the State which must take measures to effectuate full utilization and protection of the water resources within its boundaries.

B. Surface Water

Section 5956.04 specifies that no right to appropriate or use surface water subject to appropriation shall be initiated or acquired except upon compliance with the provisions of the Code. No person shall take water from a stream, lake, or other watercourse without having a valid right to do so.

Section 5956.16 provides for application for a permit to acquire appropriation rights to be made to a Board of Water Commissioners. A permit is not required for utilization of up to 300 acre feet of the impounded water from a reservoir in a stream having a minimum flow of not more than one-half million gallons per day.

Section 5956.20 requires that a written statement from the Board be obtained by persons desiring to build a dam or reservoir on any

stream with a minimum flow of more than one half million gallons of water per day. The statement must indicate that the construction will not affect plans for the proper utilization of the water resources of the State. If the stream is in a levee district, a copy of a resolution adopted by the levee board approving the construction must also be presented to the Board of Water Commissioners.

Section 5956.23 requires approval by the Board of Water Commissioners for diversion of watercourses.

Surface water appropriation is made equal to other property rights. Section 5956.05 specifies that no water appropriation acquired pursuant to law shall be declared forfeited and surrendered, except by a court of competent jurisdiction, as other property rights are determined. However, after good cause has been shown, the Board of Water Commissioners may modify or terminate any appropriation at any time.

Obstruction of navigable streams is punishable by fines and/or imprisonment (Sections 2210, 2211, 2414, 2415, 8289, and 8416) and discharge of waste into streams is regulated (See page 21 of this Appendix).

The Code establishes the rights of several groups to affect surface water. Municipalities may establish, alter, and change the channels of streams or watercourses (Section 3374.122) and may erect, purchase, maintain and operate waterworks (Section 3374.130). County boards of supervisors may, for authorized flood control improvements of the United States, provide lands, easements, and rights of way; may hold and save the United States free from damage; and may maintain and operate the improvements upon completion (Sections 4767 - 4768).

Drainage districts and water management districts are established to further soil and water conservation and utilization programs in cooperation with the United States and landowners and to strengthen flood control and drainage programs (Sections 4576-4766.07). Flood control districts are established (Sections 4769-4826.01) to cooperate with the United States in construction of flood control improvements. Master water management districts, to plan for works of improvement developed and carried out in cooperation with the Secretary of Agriculture under the provisions of Public Law 566, 83rd Congress, are authorized by Section 5956.101.

Several special districts for management of surface water resources are established: the Pat Harrison Waterway District, the Big Black River Basin District, the Pearl River Basin Development District, the Pearl River Valley Water Supply District, and the Tombigbee River Valley Water Management District.

C. Ground Water

Rights to ground water are specifically exempted from the sections of the Code pertinent to conservation and development of water resources (Sections 5956.01-5956.268).

House Bill Number 887, as signed by the Governor, June 10, 1966, requires that every person, firm, or corporation desiring to engage in the business of drilling wells for underground water shall apply to the State Board of Water Commissioners for a drilling license. Furthermore, drillers are required to report each well to the Board within thirty days after completion. No license is required for construction of a well on one's own property intended for use only in a single family house which is the permanent residence of the driller. Neither is a license required where the well is used only for watering livestock on the landowner's farm, provided the waters are not to be used by the public.

D. Access to Lakes and Streams

Access to lakes and streams is generally provided through the exercise of eminent domain. (See pages 9-12 of this appendix.)

Several groups are empowered to provide access: county boards of supervisors, drainage district commissions, water management commissions, master water management commissions, flood control district commissions, the Game and Fish Commission, the Marine Conservation Commission, the Pat Harrison Waterway District, the Big Black River Basin District, the Pearl River Basin Development District, and the Tombigbee River Valley Water Management District.

E. Diversion Between Basins

Provision is made for consideration, approval, modification, or rejection by the Board of Water Commissioners of applications for permanent or temporary changes in the place of diversion of use of water (Section 5956.23).

Power is given the governing authority of municipalities by Section 3374.122 to establish, alter, or change the channels of streams or watercourses to promote the health, comfort, and convenience of the inhabitants. Drainage district commissions (Section 4739), water management district commissions (Section 4606.7), master water management district commissions (Section 5956.108), and flood control district commissions (Sections 4803 and 4803.01) may construct dams and bypasses for conveying overflow water from a stream so long as the water is discharged back into the same watercourse or another within thirty-five miles from the mouth thereof. However, Section 4744 specifies that the Drainage District Act does not permit the diversion of water from one watershed or basin to another.

F. Eminent Domain

Section 17 of Article 3, the Bill of Rights, provides that private property shall not be taken for or damaged by public use, except on due compensation being first made to the owner in a manner prescribed by law. Sections 2747 through 2782 of the Mississippi Code established the procedures and regulations to be used in the exercise of the right of eminent domain. Several sections of the Code specifically relate the right of eminent domain to the water resource of the State.

County boards of supervisors, drainage district commissions, water management district commissions, master water management districts, flood control district commissions, the Game and Fish Commission, the Marine Conservation Commission, the Pat Harrison Waterway District, the Big Black River Basin District and the Pearl River Basin Development District, and Tombigbee River Valley Water Management District are authorized to exercise the right in situations that have impact upon the water resources of the State. The several instances, together with designation of the appropriate section of the Code, are given below:

County boards of supervisors may exercise the right for lands, easements, and rights of way for construction of projects related to:

Section 2995.5, waterways on which the United States has authorized navigation projects;

Section 4767, authorized flood control improvements of the United States;

Section 4767.3, authorized flood control improvements for protection of a potential industrial area or for industrial purposes;

Section 5965, public park or scenic easement, for national parkways;

Section 6037, state parks, forests and other similar purposes;

Section 7627, boat landings and cotton yards; and

Section 8503, roads, streets, highways, seawalls, breakwaters, bulkheads, sloping beaches, and such other devices as may be adopted for the protection of such highways;

Drainage district commissions may exercise the right for lands, easements, and rights of way for construction of:

Section 4593, main ditches, laterals, drains, or levees;

Section 4721, drainage ditches across highways and railroads, telephone and telegraph lines; and

Sections 4766.01 and 4766.02, levees or drainage ditches for flood control work constructed by the United States or any agency thereof.

Water management district commissions may exercise the right for all purposes for which drainage district commissions may exercise the right (Section 4606.7).

Master water management districts may exercise the right for:

Section 5956.108, any property, real or personal, or rights or interests therein reasonably necessary to carry out the other powers of the districts.

Flood control district commissions may exercise the right for:

Section 4776, flood control purposes; and Section 4794, dominant power to exercise the right of eminent domain over the rights of eminent domain of railroad, telegraph, telephone, gas, waterpower, power, and other companies or corporations.

The Game and Fish Commission may exercise the right for:

Section 5844, lands or water suitable for fish hatcheries, game and land farms, state parks, refuges, or for public shooting, trapping, or fishing grounds, or water.

The Marine Conservation Commission may exercise the right for:

Section 6073, construction of ditches or canals to bring additional water to existing oyster reefs or beds, or to create new oyster reefs or beds.

River Basin Districts, (the Pat Harrison Waterway District, Section 5956.180; the Big Black River Basin District, Section 5956.227; the Pearl River Basin Development District, Section

5956.257; the Tombigbee River Valley Water Management District, Section 5956.135) may exercise the right for:

any property, real or personal, or rights or interests therein reasonably necessary to carry out the other powers of the districts.

Public utility companies and municipalities may exercise the right for:

Sections 2778 and 2780, construction of posts, wires, conductors, and pipe lines along and across any waters or canals, as long as they are not dangerous to persons or property and do not interfere with common use.

II. REGULATORY AUTHORITY

The regulatory authority provided by the Constitution and the Code pertains to water rights, eminent domain, and to the several activities of man as he attempts to provide for his many needs for water. His efforts to obtain a supply for domestic use and human consumption through drilling wells and impounding water and those to preserve the land, through development of flood plains and water basins are given attention. Also given attention are his efforts to provide avenues for transportation and areas for recreation. These activities create situations that require protection of the rights of all affected persons and orderly development to provide for future needs. Furthermore, regulation must be extended to activities that have impact upon water quality as well as those affecting quantity.

The sections of the Code and the Constitution which are pertinent to these several needs for regulation follow:

A. Permits or Approval Required.

1. For drilling or abandoning wells

No permit is required for drilling or abandoning any specific water well in Mississippi. However, every person, firm, and corporation desiring to engage in the business of drilling wells for underground water must apply to the State Board of Water Commissioners for a drilling license (House Bill Number 887, as signed by the Governor, June 10, 1966). Licenses are renewable annually. Persons constructing a water well on their own properties for their own domestic and farm uses are not required to obtain a license.

Within thirty days after completion of a well, the driller must file a report in the office of the State Board of Water Commissioners.

2. For impoundments

The Mississippi Code, Section 5956.04 (b), provides for construction and maintenance, without a permit but subject to the common law and other lawful water rights of others, of a dam on any stream having a minimum flow of not more than one half million gallons of water per day and utilization of up to 300 acre feet of the impounded water so long as such action does not affect the established average minimum flow in the stream below the dam. If the dam is within the territorial limits of any watercourse lying in whole or in part within a levee district, permission must be obtained from the levee board of the levee district.

The situations other than those described above, a written statement to the effect that the construction will not affect plans for the proper utilization of the water resources of the State must be obtained from the Board of Water Commissioners (Section 5956.20).

Drainage district commissions [Section 4606.5 (1)] and flood control district commissions (Sections 4793 and 4803) are authorized to impound waters and operate and operate and maintain the structures in pursuit of their authorized objectives, as are master water management districts (Section 5956.108), water management districts (Section 4606.7), the Pat Harrison Waterway District (Section 5956.180), the Big Black River Basin District (Section 5956.227), the Pearl River Basin Development District (Section 5956.257), and the Tombigbee River Valley Water Management District (Section 5956.135).

3. For channel encroachments

Section 81 of the Mississippi Constitution of 1890 provides that the legislature shall never authorize the permanent obstruction of any of the navigable waters of the State, but may provide for the removal of such obstructions as they existed, whenever the public welfare demands.

Section 5956.16 of the Code provides for permits to acquire appropriate rights to any of the surface streams, lakes, and other watercourses for beneficial use. Application is made to the Board of Water Commissioners. While permanent obstruction of navigable waters is made a misdemeanor (Section 2414), several sections provide for encroachments. Flood control districts (Section 4803) and municipalities (Section 3374.134) are permitted to encroach within certain limits. Provision is made for posts, wires, and conductors (Section 2778), telephone and telegraph lines (Section 7837), and pipelines (Section 2780). Drainage districts (Section 4606.5), water management districts (Section 4606.7), master water management districts (Section 5956.108), the Pat Harrison Waterway District (Section 5956.180), the Big Black River Basin District (Section 5956.227), the Pearl River Basin Development District (Section 5956.257), and the Tombigbee River Valley Water Management District (Section 5956.135) are authorized to make certain encroachments in furtherance of their authorized objectives.

4. For developments in flood plains

Mississippi has provided several organizations to work with developments in flood plains. The role of each of these groups is described in more detail in pages 31 through 87 of

this appendix. Drainage district commissions (Sections 4576-4755 and Sections 4763-4766.03), water management district commissions (Section 4606.7), and master water management district commissions (Section 5956.101) are empowered to cooperate with the United States and landowners in soil and water conservation and utilization programs for the further development of the economy of Mississippi and to strengthen flood control and drainage programs. Swamp land district commissions are authorized powers equal to those of the drainage district commissions (Sections 4757-4757.03). Flood control district commissions (Sections 4769-4826.01) are empowered to cooperate with the United States or any agency or instrumentality thereof to protect the lands and other property situated in the several flood control districts from flood waters or overflow.

Master water management districts (Section 5956.108), the Pearl River Basin Development District (Section 5956.257), the Pat Harrison Waterway District (Section 5956.180), the Big Black River Basin District (Section 5956.227) and the Tombigbee River Valley Water Management District (Section 5956.135) may develop flood plains in furtherance of their objectives.

County boards of supervisors are authorized to provide additional assistance in development of flood plains (Sections 4767 - 4768). The county boards are authorized, for flood control improvements, to provide the United States all lands, easements, and rights of way necessary for the construction of projects, to hold and save the United States free from damages due to construction of any works, and to maintain and operate all works after completion.

No special permits or approvals are required, except those required by Section 5956.16, to be requested of the Board of Water Commissioners for appropriation of water rights.

5. For discharge of waste

Senate Bill Number 1955, Regular Session, 1966, established a Mississippi Air and Water Pollution Control Commission and empowered it to control, prevent and abate pollution of surface and underground waters of the State. See page N-27 of this appendix for additional information about the Commission.

Permits from the Commission may be required for the activities listed below which may cause wastes to be discharged into the waters of the State:

- (1) the construction, installation, modification of operation of any disposal system or part thereof or any extension or addition thereto;

- (2) the increase in volume or strength of any wastes in excess of the permissive discharges specified under any existing permit;
- (3) the construction, installation, or operation of any industrial, commercial, or other establishment, including irrigation projects or any extension or modification thereof or addition thereto, the operation of which would cause an increase in the discharge of wastes into the waters of the State or would otherwise alter the physical, chemical or biological properties of any waters of the State in any manner not already lawfully authorized; or
- (4) the construction or use of any new outlet for the discharge of any wastes into the waters of the State.

The State Game and Fish Commission is responsible for enforcement of the Act, insofar as it pertains to industrial pollution, and is the agency designated to conduct water quality studies provided for under the Act. The State Board of Health is responsible for enforcement of the provisions of the Act that pertain to municipal pollution. Both of these designations expire July 1, 1968, by action of the Air and Water Pollution Control Commission as expressed in minutes of the meeting of the Commission held August 12, 1966. The Commission, in resolution dated 15 November 1966, has also given the State Oil and Gas Board responsibility for setting standards and enforcing regulations pertaining to pollution from oil fields.

6. For construction of public water supply

Permits and approvals required for construction of impoundments for public water supply are the same as those indicated in the section of this appendix devoted to impoundments, pages N-8 and N-9.

Section 3374.130 of the Mississippi Code authorizes the governing authorities of municipalities to erect, purchase, maintain, operate, and regulate waterworks. The major water resource management districts, the Big Black River Basin District (Section 5956.228), the Pat Harrison Waterway District (Section 5956.180), the Pearl River Basin Development District (Section 5956.257) and the Tombigbee River Valley Water Management District (Section 5956.135) may assist municipalities in provision of adequate water supplies.

B. Water Quality

1. Waste treatment

Senate Bill Number 1955, Regular Session, 1966, provided for regulation of waste treatment by the Mississippi Air and Water Pollution Control Commission. Enforcement of the regulations is delegated by the Mississippi Air and Water Pollution Control Commission to the State Game and Fish Commission for industrial pollution and to the State Board of Health for municipal pollution. These delegations expire July 1, 1968.

Section 2414 makes pollution of navigable waters a misdemeanor and Section 2415 makes unlawful the dumping by creosoting plants and sawmills of wastage into streams. The State Oil and Gas Board, Section 6132.10(1), is held responsible for prevention of the pollution of fresh water supplies by oil, gas, or salt water.

Section 5956.04(e) forbids appropriation of water by the Board of Water Commissioners if such appropriation will impair the effects of stream standards set under the pollution control laws of the State.

2. Flow regulation

The Mississippi Air and Water Pollution Control Commission is responsible for flow regulation of streams to insure adequate water quality. Enforcement is delegated to the State Game and Fish Commission for industrial pollution and to the State Board of Health for municipal pollution. As has been stated, this delegation expires July 1, 1968.

Section 5956.04(e) provides that the Board of Water Commissioners may not approve appropriation of water or impoundments that will result in substantial detriments in either quality or quantity to property owners or to the public interest.

AD-A041 399

CORPS OF ENGINEERS CINCINNATI OHIO
DEVELOPMENT OF WATER RESOURCES IN APPALACHIA. MAIN REPORT. PART--ETC(U)

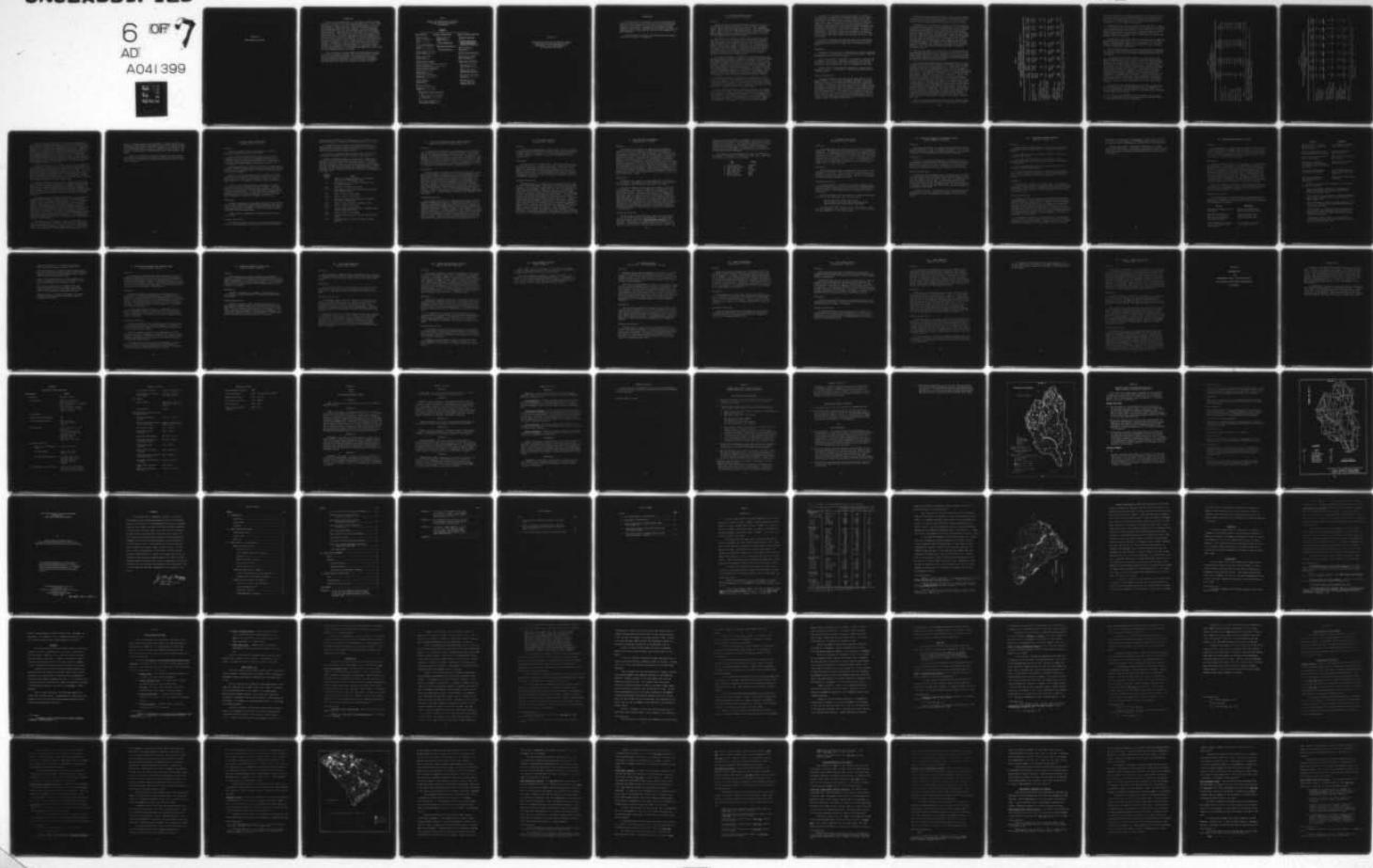
F/G 8/6

JUN 70

UNCLASSIFIED

6 OF 7
AD
A041 399

NL



SECTION II
ADMINISTRATIVE STRUCTURE

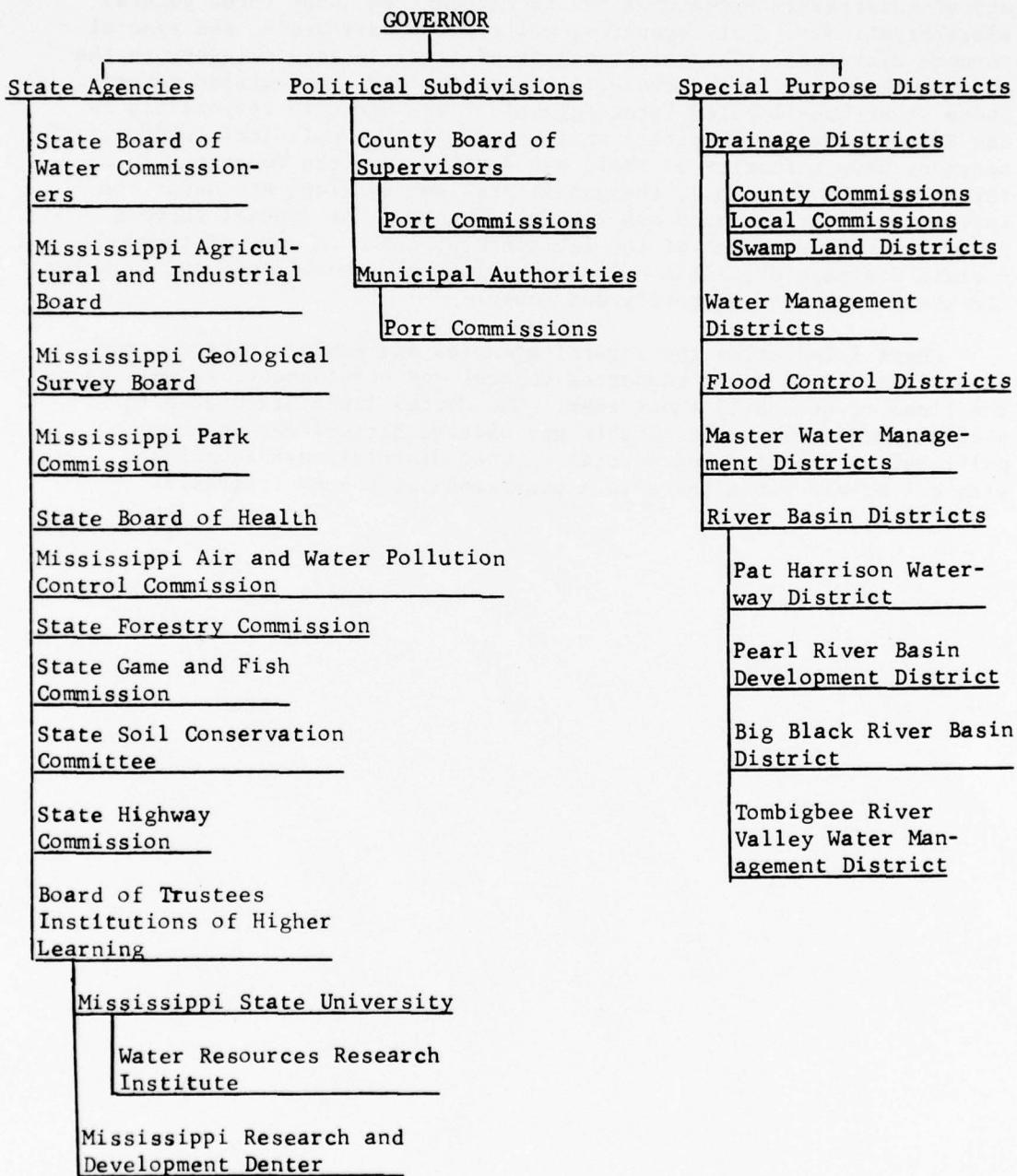
INTRODUCTION

Mississippi has empowered many of its agencies to deal with water resources in the pursuit of their individual objectives. Many of these agencies have primary objectives far removed from regulation, control, or development of water resources. Other administrative structures were created specifically for these purposes. The several agencies and administrative structures may be categorized under three general classifications: state agencies, political subdivisions, and special purpose districts. The relationships of those in each category to the chief authorities in the state, the governor and the legislature vary. Those structures labeled "state agencies" are directly responsible to the State's chief authorities while those in the "political subdivision" category have authority of their own derived from the Constitution of the State. Nevertheless, these political subdivisions are under the influence of the governor and the legislature. The special purpose districts are creatures of the legislature, although some of them - certain drainage districts - look to political subdivisions and counties, for their immediate authority and power.

Chart I indicates the several agencies and administrative structures involved in water resources control and development, as well as the lines of authority among them. The dotted lines often used to show a coordinative relationship are omitted because each agency, political subdivision and special purpose district must coordinate with all others since there is a prevalence of common interests.

CHART I

AGENCIES AND ADMINISTRATIVE STRUCTURES
THAT WORK WITH WATER RESOURCES
IN MISSISSIPPI



SECTION III

STATE AGENCIES, POLITICAL SUBDIVISIONS, SPECIAL
PURPOSE DISTRICTS AND THEIR ROLES IN THE
DEVELOPMENT OF THE WATER RESOURCES OF
THE PASCAGOULA RIVER BASIN

INTRODUCTION

It is through the state agencies, political subdivisions and special purpose districts that the provisions of the Constitution and the Code are implemented and the water resources controlled, preserved, and developed. Knowledge of these groups and their authority, organizations, programs, and activities are necessary for understanding the state posture and activities with regard to its water resources.

A brief description of each of the administrative structures composes this section of the appendix.

I. PAT HARRISON WATERWAY DISTRICT
Sections 5956.171 - 5956.196

Authority

Section 5956.43 of the Mississippi Code provided for creation of the Pat Harrison Waterway Commission, composed of Clark, Covington, Forrest, George, Greene, Jackson, Jasper, Jones, Lamar, Lauderdale, Newton, Perry, Smith, Stone, and Wayne Counties in the State of Mississippi. Sections 5956.171 - 5956.196 provided for creation of the Pat Harrison Waterway District and authorized reorganization of the Pat Harrison Waterway Commission as the District.

The District is an agency of the State and a body politic and corporate. It may sue or be sued, adopt, use and alter a corporate seal, make bylaws, employ engineers and attorneys, and may make contracts and execute the instruments needed for the exercise of its powers, rights, and privileges. It may sell, buy, or lease property and may fix and collect charges and rates for any service, facility, or commodity that it furnishes. It may operate and maintain works, plants, and facilities within the project area with the consent of the local governing body. However, the District cannot acquire minerals or royalties within a project area.

To finance its projects, it may apply for and accept grants from the United States or from any corporation or agency of the United States. The District is authorized to receive from the State two mills of all ad valorem taxes due by the counties in the District, if they are not presently retaining two mills for some other authorized purposes. Only one county, Jackson, has authorized its two mills for another purpose, that of development of the port at Pascagoula. Furthermore, counties in the District pay to the District a sum equal to one-half of one mill on all of the taxable property in the county. These payments, both state and county, will continue as long as there remains unpaid and outstanding any bonded indebtedness created by the District Board.

The Board of Directors is authorized to borrow money or issue bonds of the District to be secured solely by pledge of the net revenues of the District. The bonds do not constitute general obligations of the State of Mississippi or of the counties in the District and are not secured by a pledge of full faith. The Board is empowered to issue bonds not to exceed \$25,000,000 in principal amount.

Section 5956.108 delineates the powers, objectives, and responsibilities of the District. In general its objectives are the conservation, utilization, development, and regulation of the waterways and water resources of the Pascagoula River Basin to insure adequate flood control and soil erosion control programs, a sanitary water supply, a satisfactory development of recreation facilities related to water, and improvement of navigability of streams to the extent feasible.

In pursuit of its objectives the District plans, coordinates, and implements a comprehensive development program. It may impound overflow water and surface water of streams in the District, may divert waters, may inundate public lands and property, and may construct works, plants and related facilities for municipal, domestic, commercial, industrial, agricultural, and manufacturing purposes. It controls open channels for water delivery purposes and water transportation and participates in reforestation programs. The District is empowered to exercise the right of eminent domain, as needed, to make possible its projects. This right is superior to the eminent domain rights of railroad, telephone and telegraph lines and properties, electric power lines, pipeline and mains and facilities in the project area.

The District may operate and maintain facilities or may permit other agencies to operate and maintain facilities with the District retaining sufficient control to assure that its standards are maintained.

Organization

Each county in the District is represented by a director appointed by the Governor who also appoints three directors at large. Directors are appointed for periods of four years.

The officers consist of president, vice-president, secretary, and a treasurer. The offices of secretary and treasurer may be combined. Officers are elected by the Board from the Board, except that the secretary and the treasurer may or may not be members of the board.

Bylaws provide for three standing committees: finance, works projects, and policy. See Exhibit B. Special committees are authorized when needed.

Program and Activities

The Board of Directors has given the following priority to its major objectives: flood control, navigation improvement, pollution abatement, provision of municipal and industrial water, improvement of recreation facilities, and provision of water for irrigation and agriculture. Furthermore, the Board regards as major responsibilities the interpretation of the needs of the District to the public and the development of cooperation among the several interested agencies and political subdivisions. In the pursuit of its objectives, the District interprets the need, provides the administrative and financial base to meet the need, identifies specific program capabilities, researches these capabilities, develops and constructs facilities and, finally, manages the completed improvements.

Although the Board recognizes the need to provide facilities and services in all political subdivisions that provide financial support, it has adopted as a policy the development of the District in its entirety, realizing that benefits will permeate the entire District.

The capability of the District is enhanced by the role played by its executive director as the State representative on the coordinating committee for the development of the comprehensive plan for the Pearl and Pascagoula River Basins. The executive director has provided effective liaison among the several political subdivisions and State agencies. Representatives of the State agencies were invited to meet with the Comprehensive Basin Study Committee. Agenda for the meetings were sent to all State agencies prior to meetings. Copies of plans for development and changes of plans were forwarded to all State agencies while copies of appendices of each Federal agency were sent to all State agencies. At a meeting of representatives of the State agencies, it was made clear that special meetings would be called if any agency found itself facing problems that might be solved by cooperative effort.

The executive director also served as a link between Federal and State agencies and assisted in the coordination of activities of the several Federal agencies involved. He worked closely with the United States Corps of Engineers, the United States Soil Conservation Service, and the Federal Water Pollution Control Administration throughout the period during which the study was conducted.

Not only has the District played a coordinative role, but it has projects of significance and substance, both completed and in progress. A general policy of the District pertaining to public reservoirs was approved in 1963 and is included as Exhibit C. The pilot project of the District, the Flint Creek Project, is near Wiggins, Mississippi, in Stone County. It encompasses the construction of a lake of approximately 1,900 acres of land acquired by the District with an earthfilled dam approximately 2,050 feet long across Flint Creek Basin. Costs of the project are estimated to be \$2,205,000 for recreation development. Table I gives pertinent detail data for the Flint Creek Project and for seven other proposed action projects to be completed - one in each of seven counties. These projects range in size from the West Tiger Creek Project with a drainage area of 3,760 acres and a storage volume of 2,000 acre-feet to the huge Thompson Creek Project with 112,640 drainage acres and 40,000 acre-feet of storage volume. Other projects may be considered at a later date. The eight projects will provide a total of 6,702 acres of water for fish, wildlife, and recreation and a storage volume of 52,500 acre-feet for water supply. Eleven-thousand-nine-hundred-thirty acres of land will be utilized and 3.6 miles of dam will be constructed. Location of the lakes is shown on page N-60.

Four of these proposed projects, Kittrell Creek, Thompson Creek, West Tiger Creek and Whetstone Creek are located partially or wholly

TABLE I
PASCAGOULA RIVER BASIN
SUMMARY OF PERTINENT DATA FOR PAT HARRISON WATERWAY DISTRICT'S
PORTION OF PROPOSED EARLY-ACTION PLAN

	Little Flint Creek	Black Creek	Big Creek	Archusa Creek	Kittrell Creek	Thompson Creek	West Creek	Tiger Creek	Whetstone Creek
Drainage area, acres	10,000	10,000	10,000	6,413	112,640	3,760	4,706		
Dam location, county	Stone WS, R FW, FC	Lamar R, FW	George WS, R FW	Clarke R, FW	Greene R, FW	Perry WS, R FW	Jones R, FW	Wayne R, FW	
Purpose ¹									
Pool elevations, msl									
Conservation (normal)	225	275	85	218	192	181.5	205	232	
Average summer	223	274	82	218	192	176.8	205	232	
Storage volume, acre-feet									
Conservation (normal)	9,500	2,500	3,000	2,700	3,000	40,000	2,000	2,500	
Dam dimensions and data:									
Type	earth- fill	earth- fill	earth- fill	earth- fill	earth- fill	earth- fill	earth- fill	earth- fill	earth- fill
Length, feet	2,050	1,400	1,500	1,500	2,140	6,560	2,015	1,830	
Maximum height, feet	52	35	45	35	39	47	26	21	
Areas, acres									
Average summer pool	600	400	400	400	329	4,100	217	256	
Total to be utilized	1,900	700	1,000	800	730	5,800	500	500	

¹WS = Water supply; R = Recreation; FW = Fish and wildlife; FC = Flood control.

within the boundaries of the DeSoto National Forest. The availability of National Forest land for these developments has been coordinated with the United States Forest Service but additional coordination will be needed to delineate responsibility and authority between the two agencies at the time of project authorization.

Estimated costs for each of the eight projects are given in Table II. Total estimated cost of construction of the reservoirs is \$7,807,000 and of recreation facilities \$8,406,000. Thus, total cost will be over sixteen million dollars. Part of this cost may be borne by the United States Forest Service for construction of recreation facilities on National Forest land at Thompson Creek, Kittrell Creek, Whetstone Creek and West Tiger Creek projects.

Preliminary economic analysis data for the projects is in Table III. Benefit-cost ratios range from a low of 1.9 for each of three projects, Kittrell Creek, Whetstone Creek and West Tiger Creek, to 3.2 for the Thompson Creek Project. Location of the projects is shown on Exhibit D, Map of the Pascagoula River Basin.

The five projects proposed by the United States Corps of Engineers will provide an additional 31,400 acres of water surface and 2,494,000 acre-feet of storage volume in the Basin. See page N-60 for location of the projects.

The combined proposed action projects of the Corps and the Pat Harrison Waterway District will thus provide thirteen major bodies of water with 38,102 surface acres of water. The direct benefits through flood control, supply of water, pollution control, and recreation and development of fish and wildlife are impressive. Although indirect benefits were not used to justify the projects described in the Comprehensive Study, they are also impressive. Development of the water resources will increase the demand for goods and services through improvement of farm incomes, increase in tourist expenditures, and improvement of industrial growth potential. The economic effects upon a community of the addition of industrial jobs are too well known to need mentioning here. Furthermore, these improvements increase both retail sales and the value of the ad valorem tax base. Tax revenues of both the State and local governmental units are thus substantially improved.

Construction by the Federal government is already in progress on an additional reservoir, the Okatibbee Reservoir, in Lauderdale County. It is anticipated that local interest will contribute through the District approximately seventeen percent of the total cost of \$9,000,000 upon completion of the project.

The District has established a Soil Conservation Service Trust Fund to finance additional Soil Conservation Service work plan parties so that watershed planning can be expedited.

TABLE II
PASCAGOULA RIVER BASIN
COSTS FOR PAT HARRISON WATERWAY DISTRICT'S
PROPOSED EARLY-ACTION PLAN

	Normal Pool Size (Acres)	Cost of Reservoir	Cost of Recreation Development	Total Cost
Flint Creek	600	\$ 705,000	\$ 1,500,000	\$ 2,205,000
Little Black Creek	400	500,000	1,000,000	1,500,000
Big Creek	400	500,000	1,000,000	1,500,000
Archusa Creek	400	500,000	1,000,000	1,500,000
Kittrell Creek	329	329,000	987,000*	1,316,000
Thompson Creek	4,100	4,800,000	1,500,000*	6,300,000
West Tiger Creek	217	217,000	651,000*	868,000
Whetstone Creek	<u>256</u>	<u>256,000</u>	<u>768,000*</u>	<u>1,024,000</u>
Totals	6,702	\$7,807,000	\$ 8,406,000	\$16,213,000

Source: Records of Pat Harrison Waterway District.

*Part of this cost may be borne by the United States Forest Service for construction of recreation facilities on National Forest land.

TABLE III
PASCAGOULA RIVER BASIN
PRELIMINARY ECONOMIC ANALYSIS FOR PAT HARRISON WATERWAY DISTRICT'S
PORTION OF PROPOSED EARLY-ACTION PLAN
(\$1,000)

	Flint Creek	Little Black Creek	Big Creek	Archusa Creek	Kittrell Creek	Thompson Creek	Tiger Creek	West Whetstone Creek
First Cost	2,205	1,500	1,500	1,500	1,316	6,300	868	1,024
Interest During Construction	---	---	---	---	---	295	---	---
Net and Gross Investment	<u>2,205</u>	<u>1,500</u>	<u>1,500</u>	<u>1,500</u>	<u>1,316</u>	<u>6,595</u>	<u>868</u>	<u>1,024</u>
Annual Charges								
Interest, 3.25%	72	49	49	49	43	214	28	33
Amortization, 0.138%	3	2	2	2	2	9	1	1
O & M (\$15,000PA)	9	6	6	6	5	62	3	4
Total Annual Charges	<u>84</u>	<u>57</u>	<u>57</u>	<u>57</u>	<u>50</u>	<u>285</u>	<u>32</u>	<u>38</u>
Annual Benefits								
Recreation	157	105	105	105	86	816	57	67
Fish and Wildlife	12	8	8	8	7	82	4	5
Flood Control	3 ¹	---	---	---	---	---	---	---
Water Supply	<u>51¹</u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>93</u>	<u>898</u>	<u>61</u>	<u>72</u>
Total Annual Benefits	<u>223</u>	<u>113</u>	<u>113</u>	<u>113</u>				
Benefit-Cost Ratio	2.7	2.0	2.0	2.0	1.9	3.2	1.9	1.9

¹ From Flint Creek Report - Value of Water to be sold in 1975

^a Not evaluated.

The District has cooperated with the United States Department of Agriculture in its existing programs in its planning to help meet basin needs in 1980. The details of these programs are given in Appendix F, the report of the United States Department of Agriculture. Structural measures to be installed in the PL-566 watersheds include ninety-six floodwater retarding structures, eleven multiple purpose structures with minimum basic facilities and 558 miles of channel improvement. The estimated installation cost of these measures is \$20,623,046. Land treatment measures include conservation cropping systems, pasture improvement, terracing, drainage, farm ponds, tree planting, hydrologic stand improvement and critical area treatment. The estimated cost of land treatment measures is \$7,672,091.

To help meet the basin needs in 1980 the United States Department of Agriculture has identified nine upstream watersheds determined to be physically and economically feasible. These nine are in addition to the eight recommended for implementation through going programs. In the nine watersheds thirty-seven floodwater retarding structures, 294 miles of channel improvement recreation facilities and land treatment measures will be installed at an estimated total cost of \$25,453,998. The Soil Conservation Service was able to fund only one work plan party. District funds enabled the Service to employ another party.

Five watershed projects (Chunky River, Sowashee Creek, Big Creek, Upper Leaf River, and Dry Creek) have been completed and approval has been given for three additional projects. Originally, \$220,000 to be utilized over a period of approximately three years was allocated to these projects. It was anticipated that the originally proposed projects would cover 453,500 acres spread over twelve counties. Subsequent allocation increased the trust fund to \$282,000 to provide for the added projects.

The Executive Director represents Mississippi on the Southeastern Comprehensive Water Pollution Control Project. The Southeastern Project is one of fifteen such federal projects. It is a cooperative effort, enlisting the support of civic groups, industries, cities, counties, state agencies, and other federal agencies. The Project brings to every level required in decision making with regard to pollution control the interpreted data and information projecting the effects of any proposed actions on the water resources, as far as fifty years into the future. The data is provided by economic studies which project water quality and pollution control requirements and by engineering studies which forecast the effects of given combinations of water withdrawals and/or pollution discharges on the established or desired uses of the waters.

Other activities of the District indicate its broad area of impact on the development of the Basin. The District is co-sponsoring a program designed to provide for storage of industrial and municipal water in the proposed Escatawpa and Bowie Reservoirs. It has made a study of the feasibility of locating pulp and/or paper mills in the

Basin. It has recognized, as have the Bureau of Outdoor Recreation and the Bureau of Sport Fisheries and Wildlife, the need for access for small boats and pleasure craft to the Basin's waterways. Preliminary estimates indicate that approximately twenty-five access ramps may be needed. The District is taking steps to investigate the needs in all streams in the Basin.

As part of its efforts to enlist the cooperation of all local and State groups, the District has produced a film which depicts the goals and resources of the District and the potential benefits that may result from its activities.

II. BOARD OF WATER COMMISSIONERS
(Sections 5956.01 - 5956.35)

Authority

The Board of Water Commissioners was created in 1956 to administer the Water Rights Law of Mississippi.

Section 5956.04 (a) states, "After April 1, 1958, no right to appropriate or use water subject to appropriation shall be initiated or acquired, except upon compliance with the provisions of this Act, and no person shall take water from a stream, lake or other watercourse without having a valid right to do so...".

The Board determines the rights of all persons initiating water uses prior to April 1, 1958, and issues written orders to be recorded in the office of the Chancery Clerk in the county in which the point of diversion is located.

Section 5956.16 provides that any person intending to acquire an appropriate right to any of the surface streams, lakes, or other watercourses of the State for beneficial use, may do so only by making application to the Board for a permit to make such appropriation.

A permit from the Board authorizes the applicant to proceed with the construction of the proposed diversion works. After the completion of the construction and the actual application of water to the proposed beneficial use, the Board examines and inspects the appropriation diversion works. If such works have been completed and the appropriation right has been perfected in conformity with the approved application and plans, the Board issues a license.

Organization

The Board is composed of seven members appointed by the Governor. The terms are staggered with one member being appointed each year for a term of seven years. One member is selected from each of the six congressional districts, as existed in 1956, and the seventh member is selected from the state-at-large.

A water engineer is employed by the Board and serves as executive officer.

Programs and Activities

The Board authorizes construction of certain dams and reservoirs when it is determined that such construction will not affect plans

for the proper utilization of the water resources of the State. It makes and maintains an inventory of the water resources of the State.

In cooperation with the United States Geological Survey, the Board operates stream gaging stations and water quality stations at numerous points. Records of water levels in wells in the various aquifers are maintained throughout the State.

Since 1960, the Board has administered the Water Well Drillers' Licensing Act and maintains a file of drillers' logs received.

A public information program is conducted by the Board, also in cooperation with the United States Geological Survey. This program provides beneficial information to water well drillers, consulting engineers, industrial planners, governmental agencies, and individuals. More than 500 requests for information are answered each year. Reports resulting from the cooperative program are published as bulletins by the Board. Some of the bulletins covering information in the Pascagoula River Basin are:

<u>Bulletin Number</u>	<u>Title</u>
58-2	Summary of the Water Resources of the Hattiesburg, Laurel, and Pascagoula Areas.
63-1	Well Records, Logs, and Water Analyses; George and Jackson Counties.
63-4	Compilation of Aquifer Test Data.
63-7	Water Resources Investigations During Fiscal Year 1963; Jackson County.
63-8	Floods of 1959 in Mississippi.
63-9	Floods in 1960 in Mississippi.
63-12	Water Levels and Artesian Pressures in Observation Wells in Mississippi.
64-3	Status of Water Resources in Jackson County.
64-4	Floods in 1961 in Mississippi.
64-5	Status of Salt Water Encroachment in Aquifers along the Mississippi Gulf Coast.
64-6	Floods in 1962 in Mississippi.
65-1	Chemical Composition of Mississippi Surface Waters; 1945-62
66-1	Proposed Reservoir for Old Fort Bayou at Ocean Springs.

III. STATE AIR AND WATER POLLUTION CONTROL COMMISSION
Senate Bill Number 1955, Regular Session, 1966

Authority

The Commission has supervision of the administration and enforcement of the Pollution Control Act (Senate Bill 1955). It has responsibility for developing programs for the prevention, control, and abatement of air and water pollution in the State. The Commission can delegate certain duties and powers pertaining to pollution, as it deems appropriate, to agency or associate members that were involved in air or water pollution control prior to the Act. The Commission may accept and administer loans and grants from the Federal Government and others for carrying on the program of control of water pollution.

Organization

The Mississippi Air and Water Pollution Control Commission is composed of the Director of the Division of Sanitary Engineering of the State Board of Health, the Water Engineer of the State Board of Water Commissioners, the Supervisor of the State Oil and Gas Board, the Director of the State Game and Fish Commission, the Director of the State Plant Board, the Executive Secretary of the State Marine Conservation Commission, and four members appointed by the Governor. Association members of the Commission are the Director of the Mississippi Agricultural and Industrial Board, the State Geologist, and the Director of State Parks. These associate members have the right of discussion, but do not have a vote. An Executive Secretary, appointed by the Commission, is administratively responsible for programs of the Commission.

Programs and Activities

The Commission has not been in existence long enough to plan and implement programs and activities. The activities in which it is to engage, as authorized by Senate Bill Number 1955, are to conduct and encourage studies and research related to air and water pollution; to collect and disseminate information related to air and water pollution prevention and control; to adopt standards of water quality; to enforce rules and regulations of the Commission; to issue or revoke orders with references to discharges of contaminants and wastes into the air and water of the State, and to install or operate disposal systems or air cleaning devices. Temporary minimum standards applicable to all surface waters as adopted by the Commission are attached as Exhibit E.

IV. STATE BOARD OF HEALTH
(Section 7024 - 7096.01)

Authority

The Mississippi State Board of Health is responsible for providing adequate methods for enforcing the laws and orders of the Board relating to health matters of the State. It also has been delegated responsibility for enforcing regulations for control of water pollution by municipalities.

Organization

The Board consists of eleven members. Ten are appointed and one, the executive officer, is elected by the Board. Eight of the appointed members are required to be qualified physicians of the State. One appointive member shall be a licensed and practicing dentist of the State, and one shall be an optometrist and a member of the Mississippi Optometric Association. The Governor appoints the members, subject to the approval of the Senate, after he has received nominations from the State Medical Association.

Programs and Activities

The Board carries on a broad and intensive program for protecting the health of Mississippians. Included in the overall program is water pollution control which the Sanitary Engineering Division has administered until recent passage of Senate Bill No. 1955. The State Board of Health laboratory provides a complete sanitary and bacteriological analysis of thousands of water and waste samples sent to the laboratory by local sanitarians and sanitary engineering staffs. The public health chemists also analyze stream samples collected by the United States Corps of Engineers and the United States Geological Survey. The recently created State Air and Water Pollution Control Commission, a separate agency which has been discussed previously in this section, now has the major responsibility for providing and enforcing provisions related to water pollution. However, the Mississippi Air and Water Pollution Commission, at its first meeting, August 12, 1966, designated the State Board of Health as the agency to enforce - under the Commission's direction - rules, orders, and regulations of the Commission insofar as they pertain to municipal pollution. The delegation of power to enforce the rules of the Air and Water Pollution Commission expires July 1, 1968.

V. STATE GAME AND FISH COMMISSION
(Sections 5841 - 5931.04)

Authority

The Commission has authority to make rules and regulations, inaugurate studies, and establish services believed necessary to carry out the purposes of the Game and Fish Act. The Commission has the authority to exercise the right of eminent domain to acquire lands overflowed by construction of dams that it has had built in order to prevent the drying up of such waters. The Commission's authority in regard to water quality control is exercised through the authority delegated to it by the State Air and Water Pollution Control Commission of which the Director of the State Game and Fish Commission is a member. The Air and Water Pollution Control Commission has designated the Game and Fish Commission as the agency to carry out the enforcement of rules of the Pollution Control Commission as they pertain to industrial pollution and to conduct water quality studies as provided for under the Pollution Control Bill. The delegation of the authority to enforce the rules expires July 1, 1968.

Organization

The Commission is composed of eleven members who are appointed by the Governor. Six members serve terms concurrent with the Governor and the remaining five are appointed for terms of six years.

The Governor appoints the chairman, vice-chairman, and director of conservation. The director is responsible for execution of the Commission's policies. With the consent of the Commission, he selects a staff in order to accomplish the purposes of the Commission. The director appoints a deputy director from among the Commission's department heads. He appoints a chief law enforcement officer whose main responsibility is supervision of all game wardens and who also directs enforcement of provisions of all the State's game and fish laws and all rules and regulations of the Commission. With the advice and consent of the Commission, the state director appoints a public relations officer who has the responsibility of making information available to the public concerning rules, regulations, and policies of the Commission.

Programs and Activities

The State Game and Fish Commission's major activities pertain to fish and wildlife restoration and management. The Commission's regular bi-monthly publication, Mississippi Game and Fish, keeps the public informed about the programs, projects, and goals of the Commission. The Commission conducts countless surveys in regard to game and fish problem areas, and makes water pollution studies. The

Commission assists pond owners in management of their ponds and conducts selective fish kills. It also assists individuals in entering commercial fish operations. The Commission cooperates with the Mississippi Park Commission and the Bureau of Outdoor Recreation on projects which they undertake. As indicated above, the Commission enforces the rules and regulations promulgated by the State Air and Water Pollution Control Commission.

The Commission owns and manages seven lakes in the Pascagoula River Basin. See Exhibit F for location of these lakes. Their names and locations, by counties, are as follows:

	<u>Name</u>	<u>County</u>
1.	Tom Bailey Lake	Lauderdale
2.	Claude Bennett Lake	Jasper
3.	Ross R. Barnett	Smith
4.	Mike Conner Lake	Covington
5.	Bogue Homo Lake	Jones
6.	Lakeland Park	Wayne
7.	Perry County Lake	Perry

VI. MISSISSIPPI PARK SYSTEM (Sections 5957.01 - 5974.16)

Authority

The new Mississippi Park System was created in 1964 by Senate Bill Number 1944. The System has full jurisdiction over the State Parks in Mississippi. It cooperates with the Agricultural and Industrial Board to advertise the State Park facilities and with other State Departments and Commissions in the furtherance of facilities available for outdoor recreation and preservation of historic sites. The System makes and enforces rules and regulations governing the use and occupancy of the lands, waters, and facilities of State Parks, and makes reasonable charges for use of such facilities.

Organization

The Mississippi Park System is composed of seven directors who are appointed by the Governor. One is selected from each of the six congressional districts in the State and one is selected from the state at large. A comptroller, business director, and chief of maintenance and construction are included on the staff.

Programs and Activities

A primary function of the System is obtaining, developing, and protecting natural park land and water facilities. The Park System is actively engaged in modernizing and renovating older park facilities expanding tent and trailer camping areas, and planning new areas to be developed.

The following parks, which are located in the Pat Harrison Waterway District, are undergoing repairs and construction.

Clarkco State Park, Quitman, Mississippi
Paul B. Johnson State Park, Hattiesburg, Mississippi
Magnolia State Park, Ocean Springs, Mississippi

Ship Island State Park, offshore, Biloxi, Mississippi, is also under the management of the System; however, it has received extensive hurricane damage and is in an inactive state.

VII. MISSISSIPPI RESEARCH AND DEVELOPMENT CENTER
(Sections 8946.01 - 8946.33)

Authority

The Center was brought into existence by The Mississippi Research and Development Act of 1964. The purpose of the Center is to provide advice and guidance in regard to research requirements to all agencies, institutions, and organizations pursuing economic development.

Organization

The Center is under the management of the Board of Trustees of Institutions of Higher Learning. The Board is responsible for general administration of the Center and its budgeting. An Advisory Council guides the operation of the Center. The Director of the Center is appointed by the Board and he, in turn, selects the Center's staff.

Programs and Activities

The Research and Development Center, in cooperation with United States Geological Survey, conducted a study entitled "Water for Industrial Development in Forrest, Greene, Jones, Perry, and Wayne Counties" which was completed in June 1966. A cooperative program with the Mississippi Board of Water Commissioners and Harrison County made possible field pumping tests for approximately fifty selected aquifers in the State in fiscal year 1966. Most of the tests were conducted in the Pascagoula River Basin.

The Center assists in finding financing for development projects, makes analysis of economic advantages or impact of specific water development projects, and identifies industrial sites in the river basins.

VIII. MISSISSIPPI FORESTRY COMMISSION
(Sections 6022-6046.55)

Authority

The Mississippi Forestry Commission is the legally constituted state forestry agency in Mississippi. It has powers and duties as follows:

- (1) to take such action as necessary to prevent, control, and extinguish forest fires;
- (2) to assist and cooperate with other agencies in the preparation and execution of plans for the protection and management of timber lands;
- (3) to encourage public interest in forestry through an information and education program; and
- (4) to assist private landowners in the protection and management of their timberlands, including the growing and distributing of tree seedlings, and providing technical assistance in all phases of forestry.

Organization

The Commission is composed of seven citizens of the State who are appointed by the Governor for staggered terms. The Governor serves as chairman. A State Forester, appointed by the Commission is charged with direction and control of all matters pertaining to forestry, as authorized by law.

Programs and Activities

Programs of the Forestry Commission are designed to encourage better management of forest lands; to preserve and protect the forest resources and the continuous growth of timber; to insure an adequate supply of forest products at all times; to prevent soil erosion and consequent silting of stream channels and reservoirs; to protect watersheds and reservoirs; to reduce forest fire hazards; to insure an adequate supply of habitats for wildlife; to insure adequate facilities for outdoor recreation for public use; to preserve scenic beauty and to encourage private ownership, economic management, and scientific development of forest lands.

The Commission carries on an expansive program of encouraging public interest in forestry by means of the press, radio, television, periodicals, bulletins and leaflets, lectures, and personal contacts. The Commission cooperates with private timber owners in providing

assistance in the protection and management of forest lands and in the marketing of forest products. It instigates technical studies relating to forest conditions and management as deemed proper by the Commission.

Several forest lands are managed by the Commission in the Pat Harrison Waterway District. These lands include those of the Ellisville State School, the University of Southern Mississippi, Kurtz State Forest, certain State Parks, Camp Shelby, and sixteenth section forest lands in some counties.

IX. WATER RESOURCES RESEARCH INSTITUTE

Authority

The establishment of a Water Resources Research Institute in each of the United States and in Puerto Rico was authorized in July 1964 by Public Law 88-379. In November 1964 the Governor designated Mississippi to establish and carry on the work of a Water Resources Institute to conduct research investigations and experiments of basic and practical nature in relation to water resources.

Organization

The Board of Managers consists of the Director of the Agricultural Experiment Station, the Director of the Engineering and Industrial Research Station, the Director of the Bureau of Business and Economic Research, the Director of Biological and Physical Science Research Center and the Director of the Social Science Research Center. The Board establishes policy for the Institute. The Executive Director serves as secretary - without a vote. Chairman of the Board is the University's Coordinator of Research. The Executive Director reports to the Coordinator of Research, regarding administrative duties and responsibilities. The Coordinator of Research reports to the President of the University who in turn reports to the Board of Trustees.

An Advisory Committee, consisting of approximately fifteen representatives of state and federal agencies advises the Board and assists in coordinating the programs of the Institute with other agencies performing water research in the State.

Programs and Activities

At the beginning of the 1966 fiscal year, nine projects were in progress. Of the nine, one was being conducted at the University of Mississippi. Listed below are the projects, together with the departments conducting the studies.

<u>Project</u>	<u>Department</u>
Precipitation Probabilities in Mississippi	Agricultural Engineering, Mississippi State University
Water Resource Characteristics of the Town Creek Watershed as an Attraction For Industrial Users	Bureau of Business and Economic Research, Mississippi State University
Factors Affecting the Removal of Iron and Manganese from Ground Water	Civil Engineering, Mississippi State University

<u>Project</u>	<u>Department</u>
Decontamination of Low-Level Radioactive Wastes with Yazoo and Zilpha Clays	Civil Engineering, Mississippi State University
Ground-water Regulation in the Coastal Flatwoods of Mississippi	Forestry, Mississippi State University
Law of Water Resources of the State of Mississippi	School of Law (University of Mississippi)
The Effect of a New High Temperature Sewage Stabilization Process on Enteric Pathogens and Viruses	Microbiology, Mississippi State University
Local Action and Acceptance of Watershed Development	Social Science Research Center, Mississippi State University
An Inventory and Study of Beaver Impounded Water in Mississippi	Zoology, Mississippi State University

The papers listed below were published in fiscal 1966 or presented at conferences.

"Study Shows Rainfall Probabilities," McWhorter and Matthes, Mississippi Farm Research, State College, Mississippi, December 1965.

"Investigation of Water Resources in a Small Watershed," Don C. Wilcox, Proceedings, First Annual Meeting of the AWRA, December 1965.

"Iron and Manganese in Mississippi Water Supplies," L. R. Robinson, Jr., Proceedings, Mississippi Water Resources Conference, April 1966.

"Decontamination of Radioactively Contaminated Water by Slurrying with Yazoo and Zilpha Clays," Goldsmith and Middlebrooks, Proceedings, Mississippi Water Resources Conference, April 1966.

"Some Aspects of Water Balance in the Coastal Flatwoods," W. Frank Miller, Proceedings, Mississippi Water Resource Conference, April 1966.

"Offshore Boundaries," P. H. Williams, Proceedings, Mississippi Water Resources Conference, April 1966.

"The Thermal Destruction of Enteric Microorganisms During High Temperature Aerobic Sewage Treatment," Pabst, Mickelson, Brown, and Tischer, South Central Branch, American Society of Microbiology, Spring Meeting, 1966.

"Aerobic Sewage Stabilization at Elevated Temperatures," Brown, Cook, Mickelson, and Tischer, Proceedings, Mississippi Water Resources Conference, April 1966.

"The Effect of Temperature on the Microflora of Raw Domestic Sewage During Aerobic Treatment," Bostwick, Ladner, Tischer, and Brown, South Central Branch, American Society of Microbiology, Spring Meeting, 1966.

"Community Factors in Watershed Development," Wilkinson and Hughes, Proceedings, Mississippi Water Resources Conference, April 1966.

X. MISSISSIPPI AGRICULTURAL AND INDUSTRIAL BOARD
(Sections 8936 - 8938.08)

Authority

The Agricultural and Industrial Board has authority to approve or disapprove proposed contracts of political units with manufacturing firms for establishment of industrial enterprises under the Balance Agriculture With Industry program. The Board may contract with qualified firms to make market, operating, and financial feasibility studies. It is authorized to encourage establishment of industrial parks where necessary for the development of municipalities.

Organization

The Board is composed of the Governor, the Lieutenant Governor, the Speaker of the House of Representatives, the Commissioner of Agriculture, the State Chemist, and the State Geologist as ex officio members. Two state senators, two state representatives and twenty-five citizens from the State at large are selected and appointed by the Governor. The Governor appoints a director who may not be a member of the Board. The Director selects, with the approval of the Governor, other necessary assistants.

The Mississippi Marketing Council is a department within the Board. An Associate Director for Agriculture and Forestry Service serves as Secretary of the Council and also serves the Agricultural Industries Department as directed by the Director and Executive Committee of the Board.

Programs and Activities

The Board cooperates with development groups and other agencies in planning and coordinating economic development in the State. It gives assistance to city, county, and regional planning commissions in their local planning problems.

The Board prepares and carries out a comprehensive national advertising program in newspapers, periodicals, and television media covering the economic development of the State. The program includes industrial development, tourist promotion, and marketing promotion for Mississippi-made products.

The Marketing Council helps stimulate development of new markets for Mississippi products and encourages establishment of processing plants to prepare agricultural and forestry raw products for sale to markets in the United States and abroad.

XI. MISSISSIPPI GEOLOGICAL SURVEY BOARD
(Sections 8954.01 - 8954.10)

Authority

The Mississippi Geological Survey Board is responsible for direction of a geological, economic, and topographical survey of the State of Mississippi. It has authority to cooperate with the United States Geological Survey or other federal agencies. Such cooperative effort may be directed by either of the contracting parties at the discretion of the Board.

Organization

The Board is composed of five members: two geologists, one civil engineer, and two businessmen. All members are appointed by the Governor.

Program and Activities

The Board investigates, maps, and compiles reports upon the water supplies and water power of the State with reference to their application to irrigation, protection from overflow, and other purposes. Its other duties are less pertinent to this appendix. They involve examination and mapping of mineral natural resources and construction materials, as well as the preparation of special reports about the geological and natural resources of the State.

XII. STATE HIGHWAY COMMISSION (Sections 8014 - 8059.5)

Authority

The Commission has complete control and supervision with authority and necessary powers to locate, relocate, widen, alter, change, straighten, construct, or reconstruct any and all roads on the State highway system.

Organization

The Commission consists of three members who are elected in the same manner in which the Governor is elected and for terms of four years. One is from each of the three supreme court districts of the State.

Programs and Activities

The Commission plans, constructs, maintains, and regulates the roads on the State highway system. In addition to these activities, the Commission provides advice for the several counties on all matters of policy, use of funds, priority of construction, uniform standards for State aid roads, and other related matters. State aid funds are provided to county boards of supervisors for State aid road projects.

Especially pertinent to the State's water resources are the powers of the Commission which enable it to contract with the United States in flood control and drainage projects for alteration, relocation, reconstruction, or abandonment of State highways as this becomes necessary for construction of the projects. The Commission works closely with agencies of the United States and the several water districts in planning projects and reviewing reports prepared by the Corps of Engineers.

XIII. MASTER WATER MANAGEMENT DISTRICTS (Sections 5956.101 - 5956.130)

Authority

Master water management districts are empowered to carry out in an orderly manner works of improvement for the purposes of drainage, prevention of floodwater damage, or the conservation, development, utilization, and disposal of water. These powers include the impoundment, diversion, flowage, and distribution of waters for beneficial use. However, the authority of the Districts is limited to plans for works of improvement which have been developed and carried out in cooperation with the Secretary of Agriculture under the provisions of Public Law 566 of the 83rd Congress. Authority of the Districts includes projects for any of the purposes provided for above, which may be developed and carried out by or in cooperation with the United States Government under other laws of the United States.

Organization

Master water management districts are governmental subdivisions and public bodies, corporate and politic. The districts may be organized from the territory of two or more existing drainage or water management districts and/or from territory not included in existing districts upon petition to the Chancery Court by the commissioners of the existing districts and by the landowners of the said other territory.

Five commissioners are appointed by the chancery court for staggered terms of five years each. A president and a secretary are elected from the membership of the commission by the commissioners. The commissions may incur expenses, borrow money, and assess the lands of the district in proportion to the benefits accruing to the lands.

Programs and Activities

In conjunction with the United States Secretary of Agriculture or with the heads of other involved Federal agencies, the Districts develop plans for works improvements for the entire areas of the district, implement the plans, and maintain and administer improvements and facilities constructed.

One master water management district, the Chunky River Master Water Management District, has been organized in the Basin. As shown in Exhibit D, this District is located in Newton and Neshoba Counties.

XIV. WATER MANAGEMENT DISTRICTS
(Section 4606.7)

Section 4606.7 of the Code provides for designation of drainage districts as Water Management Districts, without affecting the authority, organization, program, or activities of the district.

Three water management districts are located in the Basin. See Exhibit D. The Dry Creek Water Management District is in Covington County. Big Creek Water Management District extends into three counties: Jasper, Smith, and Jones. The Upper Leaf River Water Management District is partly in Smith County and partly in Scott County.

XV. DRAINAGE DISTRICTS
(Sections 4576 - 4757.03 and 4763 - 4766.03)

Authority

Drainage districts may be organized for the purpose of reclaiming wet and overflowed land for agricultural as well as sanitary purposes. Districts have authority to construct drains and/or erect necessary levees over the land of others or on land acquired by the district for this purpose. Natural drains and water courses may be altered as deemed necessary.

Districts may make assessments on lands in the districts in proportion to benefits received in order to pay for improvements. Bonds may be issued in the total amount of benefits assessed against all real property in the district. Districts may cooperate with, enter into agreements with, and receive financial and other assistance from State agencies and political subdivisions of the State and other organizations created under State laws. Districts are bodies corporate and can sue and be sued. Section 4606.7 of the Code authorizes Drainage Districts to redesignate themselves as Water Management Districts.

Organization

Upon petitions of land owners, drainage districts may be organized with county commissioners or with local commissioners. County commissioners are selected by the board of supervisors. There are three county commissioners; each is selected for a term of six years. Local commissioners are appointed by the Chancery Court. Three are appointed for terms of six years. In 1958 drainage districts were empowered to become known as water management districts (Section 4606.7).

Programs and Activities

Drainage districts develop plans and specifications for all drainage improvements, implement the plans, and maintain the improvements. Only one drainage district, the Sowashee Drainage District near Meridian, Mississippi, is located in the Pascagoula River Basin. Other districts have been designated Water Management Districts. See Exhibit D, a map showing districts organized to develop watersheds in the Pascagoula River Basin.

XVI. SWAMP LAND DISTRICTS (Sections 4757 - 4757.03)

Authority

Swamp Land Districts organized prior to the Code of 1930 are allowed to continue operations under provisions of the Code of 1906 and amendments to it. However, no additional swamp land districts may be organized. The districts are to make necessary improvements and to maintain existing drainage channels. Districts have authority to contract and cooperate with agencies of the Federal Government in maintenance of such channels. The board of supervisors has authority to levy an annual tax, not to exceed twenty cents per acre in any one year, upon all lands in the district when this has been recommended by the commissioners of the district.

Organization

Three commissioners are appointed for four year terms by the board of supervisors in counties where swamp land districts exist and where there are no commissioners now in office. The commissioners manage all the affairs of the district. They have power to do all necessary acts to carry out the intended purposes of the swamp land districts.

Programs and Activities

Swamp land commissions control and manage the affairs of the districts, make improvements for drainage purposes, and maintain drainage channels. At the present time there are no swamp land districts in the Pascagoula River Basin.

XVII. FLOOD CONTROL DISTRICTS (Sections 4767 - 4826.01)

Authority

Flood Control Districts may be organized for the purpose of cooperating with the United States in flood control improvements; reclamation of overflow land, and construction, operation, and maintenance of dams and reservoirs.

Commissioners may exercise the right of eminent domain. They may contract and be contracted with, sue and be sued, plead and be impleaded, exercise the right of taxation, and borrow money and issue notes therefor. Districts are empowered to fix and levy annually an ad valorem tax of not exceeding four mills on the dollar for preliminary expenses and one mill for maintenance. Bonds may be issued for purchase of lands and easements, and alteration of highways. The amount of indebtedness shall not exceed the limits of preliminary expenses.

Organization

Districts are organized by petition to the Chancery Court by the county board of supervisors. The court appoints as commissioners three qualified electors for terms of four years.

Programs and Activities

The Commissioners adopt the plan developed by an agency of the United States for all flood control improvements in the District. In cooperation with the United States the board constructs the planned improvements, and maintains them. The Pascagoula River Basin does not contain a flood control district.

XVIII. PORT COMMISSIONS (Sections 7546 - 7623)

Authority

Port Commissions are empowered to act as port wardens and pilot commissioners and to perform any duties pertaining to such powers within their respective municipalities. Commissions may negotiate contracts for improvements and maintenance, for employment of necessary employees, and for lands of the port. They may assist municipalities in establishing industries. Commissions have jurisdiction over the port, including terminals and harbors, passes leading thereto, and all vessels, boats, wharves, common carriers, and public utilities therein. Financing is accomplished through exercise of the powers of the political subdivision that established the port.

Organization

Harbors may be regulated and managed as ports of entry, county and municipal harbors, or as county ports. Cities of 10,000 or more may acquire sites and establish and operate harbors for small water crafts. Ports of entry have five commissioners. One is appointed by the Governor; one is appointed by the county board of supervisors, and three are appointed by the municipal authorities of the city. County and municipal port commissions have five commissioners. One is appointed by the Governor; two are appointed by the county board of supervisors, and two are appointed by the municipal authorities. County ports are established by county boards of supervisors and are composed of seven resident citizens. Two are appointed by the Governor and five are appointed by the county board of supervisors.

Programs and Activities

Port commissions plan, construct, maintain, and regulate all port facilities. The Jackson County Port Authority developed, maintains, and operates the only port in the Pat Harrison Waterway District. The port was first organized in March 1956. By 1966 it had a net worth of approximately \$23,000,000. Port facilities include land, a grain elevator, warehouses, and roads and channels at two ports facilities - one at Pascagoula and the other at Bayou Casotte. Both facilities are deep-water harbors with channels maintained at a Federal project depth of thirty-eight feet.

In 1954 there were 286.147 tons of waterborne commerce with four ships calling at the port. During 1965, total waterborne commerce moving through the port amounted to 10,005,696 tons, with 317 ocean-going vessels making calls.

The Jackson Port Authority consists of nine members, five of whom are appointed by the Governor. The Jackson County Port Authority and the Pascagoula Port Commission act jointly in the administration of port affairs.

XIX. STATE SOIL CONSERVATION COMMITTEE
(Sections 4940 - 4977)

Authority

The Committee has authority to offer assistance to the Commissions of soil conservation districts in the implementation of their programs and to inform the commissioners of activities and experiences of the other districts. The programs of the several soil conservation districts are coordinated by the committee and information concerning activities and programs of the soil conservation districts are disseminated throughout the State by the Committee. The Committee has the authority to encourage the formation of districts in areas where their organization is desirable. These districts consist of any twenty-five owners of land lying within the limits of the territory proposed to be organized. The Committee has the authority to supervise the conduct of an election for three commissioners for each such district.

Organization

The State Committee is composed of the director of the State Extension Service, the director of the State Agricultural Experiment serving ex officiis. The committee may invite the Secretary of Agriculture of the United States of America to appoint one person to serve with the above members. The Committee shall designate its chairman.

The governing body of each district shall consist of five commissioners, elected or appointed as provided. The commissioners shall appoint a chairman. The term of each commissioner shall be three years except that the commissioners who are first appointed shall be designated to serve terms of one and two years, respectively, from the date of their appointment. In order to carry out the purposes of the Soil Conservation and Domestic Allotment Act, enacted by the Congress of the United States, the Mississippi State University is designated as the agency of the State of Mississippi to administer any plan authorized by the act.

Programs and Activities

The Commissioners in the soil conservation districts conduct research; institute demonstrational programs; carry out control and preventative measures within the district; furnish financial aid to carry on erosion-control and prevention operations; obtain land for income purposes; make available material and equipment to operators within the district; construct, improve, maintain such structures as necessary for performance of any operations authorized in the Act; develop plans for conservation of soil resources; and take over and administer any soil-conservation, erosion-control, or erosion-prevention projects located within its boundaries. The commissioners formulate regulations governing the use of lands in conserving soil and soil resources and preventing and controlling soil erosion.

SECTION IV

RECOMMENDATION

FOR

COMPREHENSIVE STUDY OF THE STATE STATUTES
AND THE ROLES OF THE SEVERAL ORGANIZATIONS
AND AGENCIES

RECOMMENDATIONS

The laws of the State afford an adequate framework for development of the water and related land resources of the Pascagoula River Basin. However, the regulations have been developed over a century through efforts concentrated first upon one pressing need then upon another. Some outmoded laws have been improved through amendments; however, additional improvement may be needed. A variety of organizational structures has been provided with some overlap among their authorities and responsibilities. As needs have changed, new agencies have been established but not all outmoded agencies have been abolished.

The Comprehensive Study has as its primary objective the development of water resources through the established agencies. A cooperative effort by all interested agencies to obtain an objective study and analysis of all statutes, organizations and agencies that have impact upon the development of water resources could result in changes that would lead to their more efficient and economical development.

EXHIBIT A

MISSISSIPPI STATUTE REFERENCES

<u>Water Rights</u>	<u>Section</u>
Doctrine	5956.01 - 5956.04
Surface Water	2210, 2211, 2414, 2415 3374.122, 3374.130 4576 - 4757.03, 4763 - 4766.03, 4767 - 4826.01 5956.04, 5956.05, 5956.06, 5956.07, 5956.16, 5956.20, 5956.23, 5956.101
Ground Water	
Access to Lakes and Streams	4791
Diversion Between Basins	3374.122, 4739, 4744, 4803, 4803.01 5956.23
Eminent Domain	2749 - 2782, 2995.5, 4153 4593, 4721 4766.01, 4766.02, 4767, 4767.3, 4776, 4794, 5844 5956.108, 5956.135 5956.180, 5956.227 5956.257, 5965, 6037, 6073, 7624, 8503
Regulatory Authority	
For Drilling or Abandoning Wells	House Bill No. 887
For Impoundments	4606.5, 4793, 4803 5956.04, 5956.20
For Channel Encroachments	81, 2414, 2778, 2780, 3374.134, 4803, 5956.16, 5956.108, 5956.135, 5956.180, 5956.227, 5956.257
For Development in Flood Plains	4576-4757.03, 4767-4826.01, 5956.16, 5956.108, 5956.135, 5956.180, 5956.227, 5956.257

EXHIBIT A (Cont'd)

For Discharge of Waste	Senate Bill Number 1955
For Construction of Public Water Supply	3374.130, 5956.135, 5956.180, 5956.257
Water Quality	
Waste Treatment	Senate Bill Number 1955 2414, 2415, 5956.04, 6132.10
Flow Regulation	5956.04
Administrative Structure and Role of State Agencies	
Pat Harrison Waterway District	5956.171 - 5956.196
State Air and Water Pollution Control Commission	Senate Bill Number 1955, Regular Session, 1966
State Board of Health	7024 - 7096.01
State Game and Fish Commission	5841 - 5931.04
Mississippi Park System	5957.01 - 5974.16
Mississippi Research and Development Center	8946.01 - 8946.33
Mississippi Forestry Commission	6022 - 6046.55
Water Resources Research Institute	Public Law 88-379
Mississippi Agricultural and Industrial Board	8936 - 8938.08
Mississippi Geological Survey Board	8954.01 - 8954.10
State Highway Commission	8014 - 8059.5
Master Water Management Districts	5956.101 - 5956.130

EXHIBIT A (Cont'd)

Water Management Districts	4606.7
Drainage Districts	4576 - 5757.03, 4763 - 4766.03
Swamp Land Districts	4757 - 4757.03
Flood Control Districts	4767 - 4826.01
Port Commissions	7546 - 7623
State Soil Conservation Committee	4940 - 4977

EXHIBIT B
BY-LAWS
of the
PAT HARRISON WATERWAY DISTRICT

ARTICLE I

NAME: The name of this organization shall be the Pat Harrison Waterway District.

ARTICLE II

OBJECT: The object of such District shall be for the purpose of making engineering surveys and studies of all of the rivers and their tributaries in the counties included in the Pat Harrison Waterway District in cooperation with the Federal Government and appropriate state agencies, and in particular the Pascagoula, Leaf, the Chickasawhay Rivers, Tallahala Creek, the Chunky Creek, and their tributaries, and all other streams within the Pat Harrison Waterway District. The further purpose of such District is to control flooding, provide navigation, prevent pollution of streams, provide industrial water supply, provide recreational water storage; and to provide irrigation and agricultural water storage; and for all other related purposes and in accordance with the provisions of the act creating such District.

ARTICLE III

MEMBERSHIP: The District shall be composed of the counties of Clarke, Forrest, George, Greene, Jackson, Jones, Lauderdale, Perry, Smith, Stone, Wayne, Newton, Jasper, Covington, and Lamar. Each of such counties shall be represented by a Director appointed by the Governor; and in addition thereto, there shall be three Directors at large, who shall be appointed for the period of four (4) years in accordance with the provisions of the act creating such District and amendments thereto.

ARTICLE IV

OFFICERS: The officers of the District shall be composed of a President, a Vice-President, a Secretary, and a Treasurer. Such officers shall be selected from the Board of Directors, with the exception of the Secretary and Treasurer, who may or may not be members of the Board of Directors. The office of Secretary and Treasurer may be combined.

EXHIBIT B (Cont'd)

ARTICLE V

FISCAL YEAR: The fiscal year of the District shall be from July 1 of each year until and including the following June 30.

ARTICLE VI

MEETINGS: Monthly meetings of the Directors shall be held at 7:00 p.m. on the fourth Thursday of each month at a place to be designated by the Board of Directors for each such meeting. Special meetings of the Board of Directors may be called by the President or any three members thereof upon the giving of written notice to each Director for a minimum of seventy-two (72) hours preceding such meeting and by giving such Director notice of the matters to be considered at such special meeting. A majority of the Board of Directors shall constitute a quorum at any meeting of such Board of Directors.

ARTICLE VII

LOCATION OF OFFICE: The office of the Pat Harrison Waterway District shall be located at Hattiesburg, Forrest County, Mississippi.

ARTICLE VIII

FUNDS: All funds belonging to the District shall be deposited in a depository qualifying under the provisions of the act creating such District, to be selected by the Board of Directors of the District.

ARTICLE IX

EXECUTIVE DIRECTOR: The Board of Directors shall employ an Executive Director who shall, at the discretion of the Board of Directors, have the power to employ and discharge employees. The duties and responsibilities of such Executive Director shall be those prescribed by the Board of Directors. The salary of such Executive Director shall be determined by the Board of Directors, commensurate with the qualifications, duties, and responsibilities of such Executive Director.

ARTICLE X

EXPENDITURES OF FUNDS: Expenditure or obligation of funds of the District shall be made only on the authorization of the Board of Directors. All withdrawals shall be made by check signed by the Executive Director of the District and countersigned by the Treasurer and/or such other Director of said District who shall be authorized to countersign such checks by the Board of Directors.

EXHIBIT B (Cont'd)

ARTICLE XI

COMMITTEES: The district shall have the following standing committees, appointed for a period of one (1) year, and whose duties shall be as follows, to wit:

Finance Committee: A Finance Committee composed of five directors to be appointed by the President, whose duty it shall be to make all recommendations to the Board concerning matters of budget, financial statements, accounting, bond sales, receipts, expenditures, etc.

Works Project Committee: The Works Project Committee composed of seven directors to be appointed by the President whose duty it shall be to receive all proposed projects to be considered by the District and to cause such study of the same necessary for reporting and recommending the same to the Board for action thereon and from time to time shall recommend priorities for said projects and to report to the Board the status of authorized projects.

Policy Committee: The Policy Committee shall recommend to the Board policy on all matters not specifically provided for in the duties of other standing committees.

Special Committees: The President shall be authorized to appoint such special or temporary committees as may be necessary for the fulfillment of the purposes of the District.

ARTICLE XII

BUDGET: Subsequent to recommendations of the Finance Committee, the Directors shall adopt a budget for each fiscal year and each biennium. Such budget shall reflect all expected receipts and expenditures of the District for the ensuing fiscal year. No expenditures shall be made in excess of the budget and/or each item of such budget. After such budget has been adopted, the same may be amended during the current fiscal year at any regular or special meeting called for that purpose.

ARTICLE XIII

AMENDMENTS: The By-laws of the Pat Harrison Waterway District shall not be altered or amended except upon a two-thirds (2/3rds) vote of the Directors present at any regular or special meeting called for such purpose.

EXHIBIT B (Cont'd)

Notice of any proposed amendment shall be given to each Director at least ten (10) days in advance of any meeting at which time amendment is to be voted upon.

Revised: August 26, 1965

EXHIBIT C¹

GENERAL POLICY OF PAT HARRISON WATERWAY
DISTRICT PERTAINING TO PUBLIC RESERVOIRS²

I.

PRE-CONSTRUCTION REQUIREMENTS

- A. Every public reservoir to be constructed shall have a local co-sponsor. A co-sponsor shall be a legal entity, preferably a political sub-division.
- B. Co-sponsor shall request construction of any public reservoir and the request shall comprise at least the following, to-wit:
 - 1. Needs of Reservoir (Flood Control, Recreation, Water Supply,etc.)
 - 2. Show public necessity.
 - 3. Approximate size and cost of project.
 - (a) Land cost (per acre average)
 - (b) Construction cost of dam
 - (c) Clearing cost (per acre average)
 - (d) Other improvement cost (itemized)
 - 4. Area to Serve - Miles around reservoir and population (show accessibility of area to be served).
 - 5. Engineer statement stating reservoir is feasible from an engineering standpoint (that reservoir will hold water, etc.)
 - 6. Resolution from local governing body or bodies stating there is public need and that it will be valuable asset to the area to be served and recommending construction of the project.
 - 7. Order of co-sponsor stating its willingness to enter into a cooperation agreement with Pat Harrison Waterway District.
- C. Any Pat Harrison Waterway Director representing a County wherein a project is to be constructed shall have the right to require a public hearing to be held in the County that he represents.
- D. The local co-sponsor will acquire an option, in the name of the Pat Harrison Waterway District, on all property required by the Pat Harrison Waterway District for the public reservoir at a price not to exceed the appraised price placed upon the property by the Pat Harrison Waterway District appraiser. However, any

¹Extracted from the minutes of the Board of Directors of the Pat Harrison Waterway District.

²Final control of all developments constructed on National Forest lands under permit rests with the Forest Service. The details of responsibilities and authorities are determined and made part of the permit specifications at the time of project authorization.

EXHIBIT C (Cont'd)

condemnations of property required will be done by the Pat Harrison Waterway District. It being the intent of this provision for the local co-sponsor to assert every effort possible to acquire the property voluntarily. However, if they cannot, then the Pat Harrison Waterway District will ascertain whether or not condemnation proceedings are necessary.

II.

CONSTRUCTION OF PUBLIC RESERVOIR

- A. All contracts will be let by the Pat Harrison Waterway District.
- B. Any professional services and workmen to construct the reservoir used will be hired locally upon all factors being equal, taking into consideration quality, price, etc. The Pat Harrison Waterway District will have exclusive control of the project until completion, and will have control of all plans and specifications that are used for any construction or improvements.

III.

USE OF RESERVOIR

- A. After completion of the Reservoir and all the improvements to be located thereon, the District may lease the reservoir and facilities to a co-sponsor or some local legal entity for a long-term wherein the District would retain or receive a percentage of the gross revenues taken in from any and all sources from the use of the reservoir or its facilities (This percentage will be ascertained on each project). The District would reserve the rights to approve any and all charges and establish a minimum and maximum charge on use of all reservoirs and its facilities.
- B. The local co-sponsor shall have exclusive control subject to the lease or contract provisions. The District will reserve the right to establish the amount of public park space and recreation facilities to be constructed, and set aside for public use. (The District will take into consideration the size of the reservoir, population of the Community, the number of persons who will probably use the reservoir when establishing public park area and facilities).
- C. The Pat Harrison Waterway District will have exclusive right to control the water level and right to drain or refill the reservoir or facilities.

- D. The Pat Harrison Waterway District will have exclusive control over all sanitation, drainage and dumping of any substance into the reservoir. It will be the policy of the Pat Harrison Waterway District to work with other Federal and State agencies, and sponsor any and all projects that will be helpful to the Basin.

EXHIBIT D

PASCAGOULA RIVER BASIN

MISSISSIPPI-ALABAMA

SCALE

0 10 20 MILES

LEGEND

- HARD SURFACED ROADS
- STATE HIGHWAY NUMBER
- FEDERAL HIGHWAY NUMBER
- RAILROADS
- PRINCIPAL DRAINS
- COUNTY LINE
- STATE LINE
- NATIONAL FOREST BOUNDARY
- RIVER BASIN BOUNDARY

PROPOSED AND POTENTIAL WATER
RESOURCE PROJECTS

LEGEND

- FEASIBLE WATERSHED PROJECTS (U.S.D.A.)
- FEASIBLE WATERSHED PROJECTS DAM SITE (U.S.D.A.)
- ▲ FLOOD PREVENTION
- ▲ RECREATION
- ▲ POTENTIAL RECREATION DAM SITE (U.S.D.A.)
- ◀ PROPOSED CORPS OF ENGINEER
DAM SITE
- ◀ POTENTIAL CORPS OF ENGINEER
DAM SITE
- ◀ PROPOSED PAT HARRISON WATERWAY
DISTRICT DAM SITE
- NAVIGATION

GULF OF MEXICO

EXHIBIT E

TEMPORARY MINIMUM STANDARDS APPLICABLE TO ALL
SURFACE WATERS IN THE STATE OF MISSISSIPPI

Until such time as Water Quality Standards can be established in compliance with the Federal Water Quality Act of 1965 (PL-234) and Mississippi Senate Bill 1955, enacted during the 1966 Regular Session, the following standards shall be applicable to the surface waters of the State of Mississippi.

GENERAL CONDITIONS

1. It is the intent of the Mississippi Air and Water Pollution Control Commission that pollution of waters of the State shall be prevented, eliminated or reduced to acceptable levels to protect the public health or welfare and enhance the quality of water to insure their value for public water supplies, propagation of fish and wildlife, recreational purposes, agricultural, industrial, and other legitimate uses.
2. The limiting values of water quality herein described shall be measured by the Commission in waters under consideration as determined by good sanitary engineering practice and analyzed in accordance with latest edition of "Standard Methods for the Examination of Water and Wastewater" or other methods acceptable to the Commission.
3. In cognizance of the fact that certain waters of the State may not fall within desired or prescribed limitations as outlined, the Commission may authorize exceptions to these limits upon presentation of good and sufficient evidence of intent to comply to the extent practical or technically feasible. In no case shall it be permissible to deposit or introduce materials in waters of the State which will cause impairment of the reasonable or legitimate use of said waters.

SPECIFIC CRITERIA

1. pH.

The pH of receiving waters shall not be caused to vary more than one (1.0) unit above or below normal pH of the waters and lower value shall be not less than six (6.0) and upper value not more than eight and one-half (8.5). In cases where pH may be, due to natural background, outside limits stated above, approval of the Commission shall be secured prior to introducing such materials in waters of the State.

2. Dissolved Oxygen.

Dissolved oxygen shall not be depressed or decreased below four (4.0) mg/l unless information available to the Commission indicates normal background dissolved oxygen content of lower value. In such cases lower limits may be utilized after approval by the Commission.

3. Temperature.

Temperature of waters shall not be increased more than ten percent (10%), after reasonable mixing, above the natural prevailing background temperatures.

4. Toxic Substances.

Toxic substances shall not exceed one-tenth (1/10) of the 48-hour median tolerance limit. Bio-assay determinations shall be made in accord with latest edition of "Standard Method for Examination of Water and Waste-water" or other acceptable biological methods.

5. Taste and Odor Producing Substances.

Taste and odor producing substances discharged shall be limited to concentrations in the stream that will not interfere with the reasonable use of the water.

6. Oil and Grease

Oil and grease shall not exceed fifteen (15) mg/l.

7. Dissolved Solids.

Dissolved solids shall not exceed five hundred (500) mg/l as a monthly average or exceed one thousand (1,000) mg/l at any time.

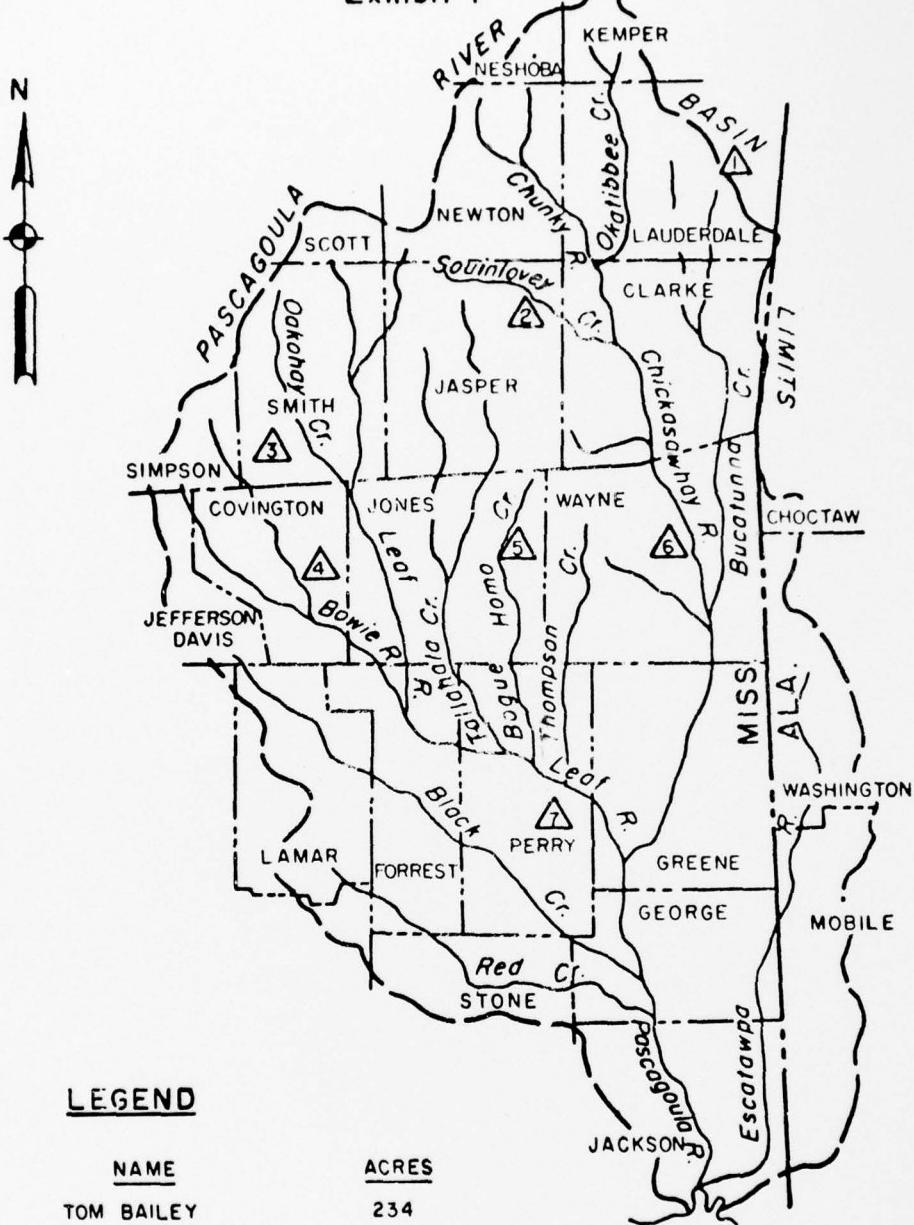
8. Chloride (CL^-)

Chloride shall not exceed two hundred and fifty (250) mg/l in streams considered to be fresh water streams; in other waters of brackish or saline nature the chloride content shall not be increased more than ten percent (10%) above normal background chloride levels.

9. Phenols.

Phenol concentration of waters shall not be caused to exceed 0.001 mg/l for waters used for public water supplies or 0.005 mg/l in waters not used for public water supplies.

Exhibit F



LEGEND

SITE	NAME	ACRES
1.	TOM BAILEY	234
2.	CLAUDE BENNETT	71
3.	ROSS BARNETT	87
4.	MIKE CONNER	88
5.	BOGUE HOMO	1,200
6.	LAKELAND PARK	12
7.	PERRY COUNTY	125

SCALE IN MILES
0 10 20 30

PASCAGOULA RIVER COMPREHENSIVE BASIN STUDY
LAKES OWNED BY MISSISSIPPI
GAME AND FISH COMMISSION

SOUTH CAROLINA LAWS, POLICIES AND PROGRAMS
PERTAINING TO
WATER AND RELATED LAND RESOURCES

by

Gene W. Dukes and James M. Stepp
Graduate Research Assistant and Alumni Professor
Department of Agricultural Economics and Rural Sociology

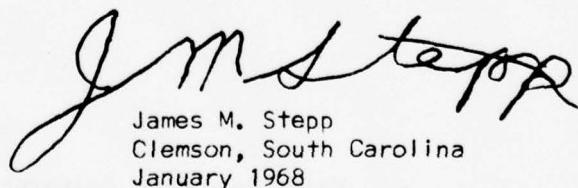
This study was supported by funds provided by
the United States Department of the Interior,
Office of Water Resources Research, as authorized
under the Water Resources Research Act of 1964,
and the South Carolina Agricultural Experiment
Station.

Water Resources Research Institute
in cooperation with
South Carolina Agricultural Experiment Station
Clemson University
Clemson, South Carolina 29631
February 1968

MAIN REPORT Part VI Exhibit 10

FOREWORD

This study was made in response to a request of the Office of Appalachian Studies, Appalachian Regional Council, which provided copies of similar reports from other Appalachian states and a suggested format for use in compiling a report which would be readily comparable with reports from the other states. It was felt that the information provided by such a study would be of sufficient value to public and private agencies and organizations concerned with the development and management of South Carolina's water resources to justify the effort and cost involved. Most of the detailed work on the study was done under my supervision by Gene W. Dukes, the senior author, as an M.S. thesis project in the Department of Agricultural Economics and Rural Sociology, Clemson University. Both of us are deeply grateful for the cooperation and assistance provided by heads of the Federal and State agencies covered by the study, who not only provided much of the original information but also reviewed the preliminary draft of the report. Most of their suggestions have been incorporated into this version of the report.



James M. Stepp
Clemson, South Carolina
January 1968

TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION	1
Objectives.	6
Previous Work	6
Procedure	8
II. SOUTH CAROLINA WATER LAWS.	9
Constitutional Law.	10
Statutory Law	11
Court Law	17
III. WATER AGENCIES IN SOUTH CAROLINA	21
Special-Purpose Districts	21
Drainage Districts.	21
Soil and Water Conservation Districts	22
Watershed Districts	24
Beach Preservation Districts.	27
Public Works Districts.	28
Miscellaneous Districts	29
Interstate Commissions and Compacts	30
Atlantic States Marine Fisheries Commission	30
Southeast Basins Inter-Agency Committee	31
State Boards, Departments, and Agencies	32
South Carolina Public Service Authority	32
State Development Board	34
State Ports Authority	35
State Commission of Forestry.	38

Chapter	Page
South Carolina Wildlife Resources Department	39
Clemson University Water Resources Research Institute.	40
South Carolina State Soil and Water Conservation Committee.	42
State Department of Parks, Recreation and Tourism	44
State Highway Department	46
South Carolina Public Service Commission	47
State Board of Health.	47
South Carolina Pollution Control Authority	48
South Carolina Water Resources Planning and Coordinating Committee.	50
Other State Groups	51
IV. POLICIES AND PROGRAMS	52
Policy	52
Programs	56
Planning Programs.	56
Research Programs.	58
Construction and Development Programs.	59
V. COMPARISONS WITH OTHER STATES	60
Law.	60
State Agencies	63
State Policies and Programs.	68
BIBLIOGRAPHY	71
APPENDIX I - A listing of the research projects that were active under the supervision of the Clemson University Water Resources Research Institute, September 1967.	75

Page

APPENDIX II - A listing of State Agencies, their head administrative officers, their addresses, and a summary statement of their water-resource responsibilities	77
APPENDIX III - A statement from the office of the State Attorney General concerning the laws of the State that relate to water.	81
APPENDIX IV - A listing of federal agencies in South Carolina with water-resources responsibilities, their administrative heads, their addresses, and a summary of their water-resource duties	83
ABSTRACT.	87

LIST OF TABLES

Table	Page
I. Average Flow of South Carolina Rivers at Selected Sites	2
II. Status of Agencies, by Selected States, that Have Soil and Water Conservation, Forest, and Wildlife Responsibilities	66
III. Principal Water-Resource Agencies of Selected States . .	67

LIST OF FIGURES

Figure	Page
1. The Surface Waters of South Carolina	4
2. Watersheds in South Carolina	25
3. Organizational Chart of South Carolina State Ports Authority.	37
4. Organizational Chart of South Carolina Wildlife Resources Department	41
5. Organizational Chart of Clemson University Water Resources Research Institute	43

CHAPTER I

INTRODUCTION

Relative to most parts of the United States and the world, South Carolina has a bountiful supply of water. Annual average precipitation exceeds 47 inches, and even though rainfall is highest in the mountain section and lowest in the central section, no section of the State has an annual average of less than 42 inches. Snowfall is not a major form of precipitation in the State.¹

South Carolina has 53 named rivers within her boundaries, but four major drainage basins drain almost the entire State. Two of these basins (the Pee Dee and the Santee) drain areas in North Carolina before reaching the State. The Savannah basin serves as the boundary line between South Carolina and Georgia and it also drains a small portion of Western North Carolina. Only the Edisto basin lies entirely within the State. In terms of drainage area, the Pee Dee and Santee Basins are the second and third largest on the Atlantic Coast of the United States.²

The Coastal Plains region of South Carolina is underlain by a high-yielding ground-water aquifer, whereas the ground-water resources of the remainder of the State are relatively scanty and scattered. The

¹Nathan Kronberg and John C. Purvis, "Climates of the States: South Carolina," U. S. Dept. of Commerce, Climatology of the U. S. No. 60-38 (Washington: U. S. Government Printing Office, December, 1959), pp. 3-7.

²South Carolina General Assembly, Water Policy Committee, A New Water Policy for South Carolina, 1954, p. 11. See also, Water Supply Papers No. 1723 and 1724, Geological Survey, U. S. Department of the Interior (Washington: U. S. Government Printing Office, 1963).

Table 1. Average Flow of South Carolina Rivers at Selected Sites

River	Site	Average flow (c.f.s.)	Drainage area (sq. mi.)	c.f.s. per sq. mi.
<u>Pee Dee Basin</u>				
Lumber	Boardman, N. C.	1,266	1,220	1.04
Little Pee Dee	Dillon	535	524	1.02
Little Pee Dee	Gallivants Ferry	3,020	2,790	1.08
Pee Dee	Peedee	9,049	8,830	1.02
Black	Kingstree	806	1,260	0.65
Lynches	Effingham	945	1,030	0.92
<u>Santee Basin</u>				
Catawba	Rock Hill	4,621	3,050	1.52
Wateree	Camden	6,189	5,070	1.22
Broad	Gaffney	2,379	1,490	1.60
Pacolet	Clifton	470	320	1.47
North Tyger	Moore	226	162	1.40
Middle Tyger	Lyman	98	68	1.44
South Tyger	Woodruff	226	174	1.30
Tyger	Woodruff	465	351	1.32
Enoree	Enoree	405	307	1.32
Broad	Richtex	5,920	4,850	1.22
Reedy	Ware Shoals	293	228	1.29
Saluda	Ware Shoals	944	569	1.66
Saluda	Columbia	2,746	2,510	1.09
Congaree	Columbia	8,305	7,850	1.00
Santee	Pineville	2,935		
Santee	Diversion Canal	13,760	14,700	1.06
<u>Savannah Basin</u>				
Keowee	Jocasse	462	148	3.12
Keowee	Newry	1,140	455	2.51
Savannah	Iva	4,067	2,231	1.82
Savannah	Calhoun Falls	4,901	2,876	1.70
Savannah	Clarks Hill	8,479	6,150	1.38
Savannah	Augusta	10,160	7,508	1.35
Savannah	Clyo, Ga.	11,290	9,850	1.15
<u>Edisto Basin</u>				
South Fork	Denmark	750	720	1.04
North Fork	Orangeburg	715	683	1.05
Edisto	Givhans	2,444 ^{a/}	2,730	0.90
<u>Other Basins</u>				
Combahee	Yemassee	483 ^{b/}	1,100	0.44
Salkahatchie	Miley	286	341	0.84
Coosawhatchie	Hampton	154	203	0.76

Source: Water Supply Paper No. 1723, U. S. Geological Survey, 1964.

a/ City of Charleston diverts water above this point.

b/ Five-year record, 1951-56.

quantity and quality of these waters compare favorably with those of most other areas of the United States.³

South Carolina has no natural inland lakes, but the State does have 533 square miles of surface water in eight major man-made reservoirs (Clark Hill, Greenwood, Hartwell, Marion, Moultrie, Murray, Wateree, and Wylie). The State also has 2,876 miles of tidal shoreline along the Atlantic Ocean.⁴ Along this shoreline, South Carolina has approximately 420,480 acres of tidelands and estuarine lands.⁵ The State also has three harbors which are located at Charleston, Georgetown and Port Royal, Figure 1.

To date, the water problems of South Carolina have arisen largely from local and temporary droughts, excessive use of streams for waste disposal, excessive pumping of ground water in a few areas, and local inadequacies of storage or transmission facilities for municipal and industrial water supplies. In the industrialized Piedmont area, where streams are relatively small, there are scattered but fairly numerous water pollution-control problems, especially when temperatures are high and rainfall is low and stream flows are also low. Nevertheless, water has been so abundant and serious water problems so few that the General Assembly has enacted very little statutory law dealing with the control and management of water.

³George E. Siple, "Ground Water in the South Carolina Coastal Plains," Journal American Water Works Association, Vol. 1L (March 1967), p. 283.

⁴South Carolina Wildlife Resources Department, Outdoor Recreation Division, Outdoor Recreation for South Carolina, (Columbia: R. L. Bryan Co., December 1966), p. 4.

⁵Edward B. Latimer, Assistant Attorney General of South Carolina, "Memorandum on Tidelands, Submerged Lands and Navigable Waters of South Carolina," March 1967, p. 13.

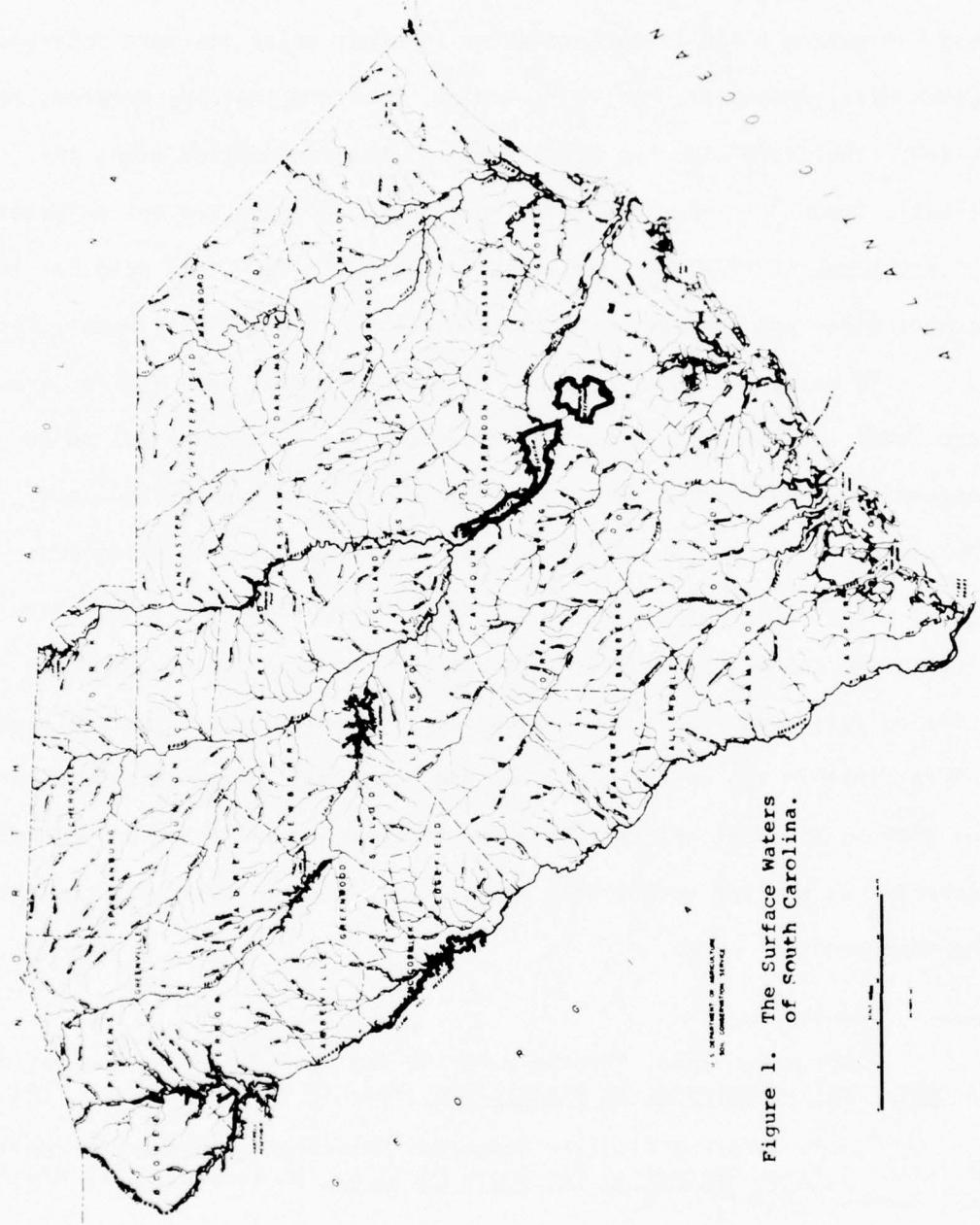


Figure 1. The Surface Waters
of South Carolina.

Several state agencies, however, have responsibilities relating directly to water (e.g., the South Carolina State Ports Authority, the South Carolina Pollution Control Authority, and the South Carolina Public Service Authority) while a number of others have more general responsibilities which include certain aspects of water development or management (e.g., the South Carolina State Forestry Commission, the State Soil and Water Conservation Committee, and the State Development Board). Each of these agencies has its own statutory authority and its own administrative policies and practices; hence, there has developed an uncoordinated "system" with considerable overlapping and a substantial number of gaps. In 1966 the Governor, by executive order, created a broad-based Water Resources Advisory Committee. An Interagency Council on water resources was also established to facilitate coordination among agencies and programs. The Interagency Council on Water Resources has, upon its recommendation, been replaced by the newly-created South Carolina Water Resources Planning and Coordinating Committee. This Committee has duties which include the formulation of a comprehensive water resources policy for the State, and the reviewing of the actions and policies of state agencies with water resource responsibilities to determine the consistency of these actions and programs with the State water policy. This agency, as of August 1, 1967, is just being established and has not had time to begin fulfillment of its duties.

This study is intended to facilitate and aid in the coordination and planning of water resource programs in this State by providing a summary of the laws, agencies, policies, and programs relating to water utilization and management in South Carolina. South Carolina is compared

with other States in the Appalachian Region and the Southeast with respect to water resource law, policy, and programs as a means of indicating some of the relative advantages and deficiencies in the legal and administrative provisions for dealing with the water resources of the State.

Objectives

The specific objectives of this study are (1) to compile a statement of the statutory authority and the operating policies, procedures and programs of state agencies concerned with water and related land resources; (2) to list and summarize the functions of federal agencies in South Carolina which have water-resource responsibilities, and (3) to make a comparative analysis of the water-related laws of South Carolina, policies and procedures in relation to those of certain other states.

Previous Work

No work similar to this study has been done in South Carolina, but comparable information is available from the States of Illinois, Indiana, Kentucky, Maryland, New York, North Carolina, Pennsylvania, Tennessee, Virginia, and West Virginia. These states compiled these data as part of Appendix J to the Ohio River Basin Comprehensive Survey. The Ohio River Basin Comprehensive Survey has not been completed as of August 1967.⁶

⁶Preliminary statements were available, however, from the above-mentioned states.

In 1952 a study by C. E. Busby dealt entirely with the subject of water rights of individuals and organizations in South Carolina. The South Carolina Law Quarterly contained a special supplement in December 1952 that was devoted entirely to the subject of water law in South Carolina.⁸ In addition, a Southeastern Water Law Conference was held in Athens, Georgia, in November 1961. The papers presented at this conference have been published and they provide considerable information on water law in the Southeast.⁹

Joint Resolution R 86, S 107, approved by the South Carolina General Assembly in 1953 established a committee to study the matter of the water policy of the State. In its report to the General Assembly of 1954, this committee recommended that the State adopt a broad-based water law centered around "beneficial use."¹⁰ Even though the recommendation of the committee went unheeded, the controversy which it created has prompted several organizations and individuals to express their ideas concerning the State laws and policies relating to water resources.¹¹

In March 1967 the first annual Governor's Conference on Water Resources was held in Columbia. Papers presented at this conference

⁷ The Beneficial Use of Water in South Carolina, a preliminary report for the South Carolina Soil Conservation Committee, Soil Conservation Service, U. S. Department of Agriculture, June 1952. Revised February 1953.

⁸ "Special Issue on Water Law." The South Carolina Law Quarterly, Vol. 5, No. 2-A (December, 1952).

⁹ Water Law and Policy in the Southeast, published by the Institute of Law and Government, the University of Georgia, Athens.

¹⁰ A New Water Policy for South Carolina, op. cit.

¹¹ Water Resources of South Carolina: Need For A State Water Policy Providing For Proper Conservation Reasonable Development and Equitable Distribution, Kit No. 1, Published by the League of Women Voters of South Carolina, September, 1960.

dealt with various aspects of water resources control, management, and development. The proceedings of this conference have been published by the Clemson University Water Resources Research Institute.¹²

Procedure

The State Constitution and State statutes concerning water were studied in an effort to determine official policies of South Carolina relating thereto. A detailed study of court decisions was considered beyond the scope of this project. However, the inclusion of some of the major court decisions relating to the use of water was necessary in order to determine the legal position of the State on this subject.

Information was obtained from State and federal agencies concerned with water and related land resources regarding their statutory authorization and their present and planned policies and programs in the area of water resource management and control. This information was utilized in an effort to determine the present and authorized involvement of the governmental agencies in the control and management of water resources.

Finally the data obtained in this study were compared with similar data from other states. The approaches that other States have adopted in regards to their water resources were then specified, and alternative approaches were enumerated.

¹² Proceedings of the First Annual South Carolina Governor's Conference on Water Resources, 1967.

CHAPTER II

SOUTH CAROLINA WATER LAWS

South Carolina water laws are composed of laws arising from these sources: Constitutional law, statutory law, and court-made law. Court-made law or common law is the most important of these three sources. It should be noted that international and national laws affect the legal position and powers of the State concerning water and related land resources.

According to The Report of the President's Water Resource Policy Commission, state powers relating to the control of water resources have seven major limitations based upon the Constitution of the United States and court interpretations of it.¹ These are:

- (1) Commerce Power. This provides the federal government with the power to regulate interstate commerce.
- (2) Federal Proprietary Power. This power gives the federal government absolute power over federal lands.
- (3) War Power. This power allows the federal government to pre-empt states in the interest of national defense.
- (4) General Welfare Power. This power gives the federal government broad power to act in the interest of the general welfare.
- (5) Interstate Compacts. Agreements made by states take precedence over contrary state laws.

¹ Report of the President's Water Resource Policy Commission, Water Resource Law, Vol. 3 (Washington: U. S. Government Printing Office, December, 1950), pp. 5-72.

(6) Rights of Riparian Owners. States may acquire riparian rights from private owners through eminent domain proceedings, but they can not acquire these rights when the federal government is a riparian owner.

(7) Treaty Making Power. Agreements made by the federal government with foreign countries are superior to state laws.

Except for the limitations enumerated above, states are free to determine their own water laws and programs. The remainder of this chapter is a summary of what South Carolina has done in this area.

Constitutional Law

The State of South Carolina presently operates under a constitution that was adopted at a convention held in Columbia in 1895. Three specific references to water are contained in the main body of the Constitution of 1895.

Article I, Section 28, provides that the navigable waters of the State shall always be public highways free to the citizens of the State and the United States, with no tax, impost or toll imposed unless authorized by the General Assembly. Also, no tax, toll, impost nor wharfage can be demanded for the use of the shores or a wharf erected on the shores or in the waters of a navigable stream unless it is authorized by the General Assembly.

Article VIII, Section 5, authorizes cities and towns to acquire ownership and management of plants that would furnish individuals and private corporations with water, lights, and ice. And Article XIV, Section 1, states that South Carolina has concurrent jurisdiction on all

rivers bordering on the State, and that these streams are free highways for all South Carolina and United States citizens unless provided for differently by the General Assembly.

Article I of the Amendments to the Constitution is also related to water resources in that it requires the General Assembly to write a law which will provide for the condemnation of all lands necessary for the proper drainage of the swampy and low lands of the State. It also requires that an equitable tax be assessed to pay the expense of the condemnation and drainage.

Statutory Law

The statutory laws of South Carolina are compiled and published every ten years, the most recent decennial publication being the 1962 Code of South Carolina Laws.² The code contains all of the general statutory law that was in effect on January 9, 1962. In addition, an annual supplement is compiled by the Committee on Statutory Laws and the Code Commissioner, and attached to the Code. The 1962 Code contains 72 Titles, each dealing with a different subject and arranged alphabetically. Titles are always broken down into Sections, and some Titles contain Chapters and Articles as well as Sections. When a number is to represent a certain statute such as 58-1, this implies that this particular statute is found under Title 58, Section 1. Generally, statutes are referred to numerically by Title and Section, with the first number designating the Title and the second representing the relevant Section.³

² 1962 Code of South Carolina Laws. (Charlottesville, Va.: Michie Company, 1962).

³ Hereafter the 1962 Code of South Carolina Laws will be referred to as the 1962 Code.

A summary of the statutory laws of the State that are of a general nature and pertain to water and related land resources will be included in this section. Statutes that authorize or establish specific water or water-related agencies will be summarized in Chapter III.

Title 18 is concerned with dams and drainage. Section 5 of this Title prohibits the building of any dam or bank to stop the course of any waters so as to overflow the lands of another unless consent of the other parties has been obtained. The letting off of reserved water that may injure crops on the lands of other persons is also prohibited. Section 18-6 makes it unlawful for persons to keep water on land belonging to others, and Section 18-7 provides for the removal of milldams that have an adverse effect on the general health of the area.

Chapter 2 of Title 18 establishes the procedure through which rights-of-way for drainage may be obtained across the lands of other persons. This procedure is laid down in Article I (Sections 10-51 to 18-58). In essence, it provides that if a person, in order to drain his land, must cut a ditch across the property of a neighbor, he can do so even if the owner of the adjacent property objects. He must give the objecting property owner a ten-day written notice of his intentions. The written notice must designate someone to act as a referee for the person who intends to drain his property. Upon receipt of this notice, the objector must name a referee to represent his interest. The two appointed referees must meet and name a third referee. The three referees examine the premises with respect to the proposed waterway or ditch and render a verdict as to the route of the ditch and the amount of compensation. The procedure is also given that would apply if the adjacent property owner was not of legal age or of legal competence.

Title 25 is concerned with the power of eminent domain. Section 25-52 has particular bearing on water resources activities. It declares:

State authorities, commissions, boards or governing bodies established by the State of South Carolina which may have been, or may be hereafter created, and authorized and empowered to develop waterways of the State for use in intrastate, interstate and foreign commerce, to construct maintain and operate powerhouse dams, canals, locks and reservoirs, to produce, transmit, sell and distribute electric power, to reclaim and drain swampy and flooded land to improve the health conditions of the State and to reforest watersheds, or for any such purposes the acquisition of property is necessary, shall have all rights of eminent domain of the State of South Carolina for such purposes....

Title 28 contains the statutes that pertain to the fish and game of the State. The largest part of this Title contains laws that regulate hunting and fishing in the State. It provides (Section 28-754) that waters and bottoms⁴ are a common⁵ for taking fish, and it also contains the authorizations for the Atlantic States Marine Fisheries Commission and the State Wildlife Resources Department.

Title 29 contains the statutes that pertain to Forestry. Section 29-14 provides for the acquisition of real estate by the State Commission of Forestry to be used for a demonstration in erosion and flood control.

Title 32 includes the State health laws, and the statutory authorization for the State Board of Health. Section 32-8 provides that any manufacturer must secure the approval of the State Health Office before disposing of plant waste into the waters of the State. Chapter 8, Article 1 contains the laws which pertain to water suppliers. Section 32-1201 provides that public water suppliers and other water suppliers that employ or deal with the public must send samples of their drinking water to the State Board of Health at least once every three months.

⁴"Bottoms," according to Section 28-752, 1962 Code, are areas below the mean high water mark.

⁵A common means that it belongs to or pertains to the community at large.

The provisions of Section 32-1203 require the State Board of Health to inspect the watersheds and the water supply of public water suppliers. If any are found to be unsafe, a thirty-day notice is given. If after thirty days the supply remains unsafe, the State Board of Health has the power to close down the operation of the delinquent supplier.

Article 7, Section 32-1284 states that hotels, restaurants, boarding houses and inns must provide a safe drinking water for their guests.

Title 33 is indirectly concerned with water resources in that it contains provisions relating to highways, bridges, and ferries. Included also in this title is the statutory authorization of the State Highway Department.

Title 54 concerns ports and maritime matters. Chapter 1 provides for the establishment of and enumerates the powers of the State Ports Authority. Chapter 2 provides for port and terminal facilities and commissions in certain cities. This Chapter allows cities with a population of 50,000 or more and located on a navigable stream, whether tidal or nontidal, to construct ports and terminal utilities. The Port Utilities Commission for such a city must be composed of nine members. Five are to be elected by the qualified electors of the city, and the other four must include the mayor, the chairman of the committee on railroads of the city, and two members who are appointed by the Governor for two-year terms.⁶

Article 2 of Chapter 2 provides the State Ports Authority with broad powers over Charleston Harbor. Thus, the powers a city commission

⁶The writer could not locate any such Commission in South Carolina.

would have if created in Charleston, under Chapter 2, would be nominal.

Chapter 3 of Title 54 covers shipwrecks in the waters of the State, and Chapter 5 makes it a misdemeanor for anyone to interfere with navigation in the harbors of the State.

Title 58 is entitled "Public Service Companies." Section 58-12 requires all navigation, water works, power, and light companies to make an annual report to the State Tax Commission enumerating their gross receipts.

Section 58-151 provides municipalities with the power to grant exclusive franchises for the furnishing of water. Section 58-152 and 58-152.1 give water companies the power to condemn land for waterworks, and Chapter 10 of this Title contains the provisions that regulate transportation companies.

Title 63 contains the laws that apply to soil and water conservation in the State. Soil and water conservation districts, the State Soil and Water Conservation Committee, and several other conservation agencies are authorized by this Title. These agencies will be discussed in the next Chapter.

Title 70 is entitled "Water and Watercourses" and contains the State statutes relating thereto. Chapter 2 authorizes the Savannah River Navigation Commission, which is no longer in operation, and Chapters 3 and 4 authorize the creation and operation of the State Pollution Control Authority. This agency is discussed in the next chapter.

Chapter 1 of Title 70 contains laws relating to navigation. It defines a navigable stream as being "one that has been or can be rendered

capable of being navigated by rafts of lumber or timber by the removal of accidental obstructions. This section further declares that navigable streams are common highways and forever free to all United States citizens, and that anyone found guilty of obstructing the navigability of a stream will be punished by law.

Section 70-2 makes the deliberate or negligent obstruction of navigation a misdemeanor. Negligent transportation of logs or rafts that damage streamside property is also defined as a misdemeanor.

Section 70-3 requires all landowners to clean out all streams upon and adjacent to their lands at least twice a year. Landowners must keep them clean of obstructions so that a free and uninterrupted flow of sand and water may pass through the channels thereof. This Section does not prohibit the building of dams, but it may be construed to require dam owners to maintain suitable and sufficient floodgates and waterways that would afford free passage through them of sand and water. Dam owners may also be required to open their floodgates if the State decides it is necessary. This would require court action.

Chapter 4, Article 1, specifies the procedure through which land may be obtained for an inland waterway. Essentially this is through the condemnation process with just compensation going to the landowners affected.

Chapter 5 is entitled "Certain Waterways." In essence this Chapter grants the powers to the federal government that are needed to carry out the Rivers and Harbors Act of 1937 (for the construction of the intercoastal waterway from the Cape Fear River, North Carolina, to the Savannah River, Georgia). Chapter 6 embodies the statutory

laws that pertain to the equipment and operation of vessels on the waters within the State. The administration of this Chapter is vested in the State Wildlife Resources Department, and it specifies that a Division of Boating be created to enforce these laws.

Court Law

The South Carolina (Colonial) General Assembly adopted the Common Law of England in open session on December 12, 1712, by stating:⁷

That all and every part of the common law of England, where the same is not altered by the above enumerated acts, or inconsistent with the particular constitution, customs and laws of this Providence ... is in full force and virtue

This declaration was incorporated into the Revised Statutes of 1872, Chapter 146, Section 10. Although it was deleted from later editions of the State statutes, the State Supreme Court upheld it in State V. Charleston Bridge Company, 113 S. C. 116, 101 S. E. 657, in 1919 by paraphrasing the original declaration.⁸

It has been generally accepted that the riparian doctrine of water law, as found in South Carolina, came to the State upon the adoption of the Common Law of England.⁹ It appears, however, that this is not true. The riparian doctrine actually evolved from the Civil Law

⁷Statutes At Large of South Carolina (Columbia: A. S. Johnston, 1837), pp. 413-414.

⁸C. E. Busby, op. cit., p. 17.

⁹Lewis Griffith Merrit, "Legal Aspects of Water Rights in South Carolina," unpublished memorandum, no date.

of France and was introduced into American Courts by Kent and Story,
two American jurists who were students of the French judicial process.¹⁰

The South Carolina Supreme Court adopted the riparian doctrine
in 1837 in the case of Omelvany V. Jaggers, 2 Hill 634, by rejecting
the doctrine of prior occupancy, which is similar to the present
doctrine of prior appropriations. It was not, however, until 1901 in
White V. Whitney Manufacturing Company, 60 S. C. 254, 385 E. 456, that
the court laid down the broad principles of the riparian doctrine as
relevant to the State.¹¹

In 1907 the Court developed the reasonable-use doctrine, and
the legal position of the State on surface waters today is still that
of the reasonable-use riparian doctrine. Basically this means that
every proprietor of lands on a bank of a river (a riparian owner) has
equal rights to the water which flows in the stream adjacent to his
land. A riparian owner has no property in the water itself, but a
simple usufruct while it passes his property. He has no right to de-
tain or give new direction to the water, and he must return it to its
proper channel before it leaves his property. The law requires that
a riparian owner must use only a reasonable amount of water, and that
he must not use the water to the injury or annoyance of his neighbors.
Reasonable use is a question of fact for a jury and its verdict is
final. Therefore, reasonable use cannot be defined exactly. It de-

¹⁰C. Petrus Peterson, "Water - The Key to America's Future,"
Proceedings of the National Water Resources Institute (Lincoln,
Nebraska, March, 1958), p. 5.

¹¹C. E. Busby, op. cit., p. 19.

pends upon the relevant conditions and the sense of judgment of the jury. What is considered to be reasonable use in one locality might not be considered reasonable in another.¹²

According to E. B. Latimer, Assistant Attorney General for South Carolina, "the State owns the waters and the beds (up to the mean high water mark) of navigable streams.¹³ Riparian rights do not confer ownership of the water, but only the right to use a reasonable amount.

Riparian rights are, however, subject to rights by prescription. This implies that a person may obtain legal rights to the use of water, even though he is not a riparian owner, by adversely acquiring and openly using the water rights of another for a period of 20 years.¹⁴

It must also be recognized that the riparian doctrine can be circumvented by expressed or implied permission or license. Since the State in effect owns the waters, this takes an act of the General Assembly. The State has made several such grants. For example, it has granted the Town of Walterboro permission to take up the eight percent of the flow of the Edisto River for domestic, industrial, and agricultural purposes (1962 Code, Section 70-471). Similar grants have been issued to the International Paper Company at Georgetown and to the Town of Newberry (1962 Code, Sections 70-481 and 70-491). The use of the water through permission is subject to the will of the permitter and cannot ripen into rights by prescription.

¹² Lewis Griffith Merrit, op. cit.

¹³ Letter to the author from E. B. Latimer, Assistant Attorney General of South Carolina, July 13, 1967.

¹⁴ C. E. Busby, op. cit., p. 33.

According to C. E. Busby, South Carolina has no authoritative body of water law established for ground water.¹⁵ E. B. Latimer, however, believes that the common-law rule that "the owner of the soil owns to the sky and to the center of the earth" governs ground water rights in the State.¹⁶ Under this rule ground water would be the property of the land owner, and hence he could use it as desired.

Diffused surface waters (waters which are on the surface of the ground, but are in no way a part of a defined stream) have received attention from the State Courts. The Courts, in general, have regarded these waters as a common enemy, and have applied the common-enemy doctrine to questions involving them. Under this doctrine a landowner may take the appropriate steps to relieve or protect himself from these waters even though his actions may result in damages to adjacent property owners.¹⁷ This is also the attitude that the State Highway Department takes towards diffused surface water.

¹⁵C. E. Busby, op. cit., p. 16.

¹⁶Latimer, op. cit..

¹⁷C. E. Busby, op. cit., pp. 30-32.

CHAPTER III

WATER AGENCIES IN SOUTH CAROLINA

In this chapter agencies that are authorized by the State to operate in the area of water resource management or control will be listed and discussed. To facilitate this undertaking, all agencies have been classified into one of the three following categories: (1) special-purpose districts; (2) interstate commissions; and (3) state boards, departments, and agencies. They will be treated in the order in which they are listed.

Special-Purpose Districts

Drainage Districts. Article I of the Amendments to the State Constitution of 1895 requires the General Assembly to provide for the proper drainage of the swamp and low lands of the State. The General Assembly has enacted two Acts providing for the establishment of drainage districts. The first Act was adopted in 1911 and was entitled the Drainage District Act of 1911 (1962 Code, Sections 18-201 to 18-333), and the second Act under which drainage districts may be established is the Drainage District Act of 1920 (1962 Code, Title 18, Chapter 5). The Act of 1920 was considered to be cumulative and not pre-emptive relative to the other laws of the State pertaining to drainage and drainage districts.

Districts may be established under these two Acts by landowners who wish to join together in an effort to drain and reclaim wet, swamp, or overflowed lands. The costs incurred by these districts could be paid with revenue received from a property tax and from a limited issue of bonds. These districts could also accept financial aid from the United States Government.

The Drainage District Act of 1920 has been amended so that districts established under this Act may develop small watershed projects. According to Lewis E. Hendricks, Executive Secretary of the State Soil and Water Conservation Committee, the Act is too cumbersome to insure the fast and efficient development of watersheds, and no watersheds have been developed under it.¹

There have been many drainage districts established in the State, but none exists at present. Busby attributes the failure of drainage districts in the State to their failure to maintain ditches and to collect sufficient assessments for this purpose.²

Soil and Water Conservation Districts. In February 1937 the President of the United States wrote the Governors of all the States requesting that each State legislature pass an enabling Act permitting local land owners to join together into soil conservation districts.³ South Carolina responded to the request of the President immediately, and on April 17, 1937, an Act known as the Soil Conservation Districts Law (1962 Code, Sections 63-51 to 63-167) went into effect. This law was amended in February 1965, changing soil conservation districts into soil and water conservation districts (R115, H1187).

A soil and water conservation district is a legal unit of the state government. Each district is self-governed, being directed by a board of five supervisors. Three of these five supervisors are elected

¹Personal interview, Columbia, S. C., July 12, 1967.

²C. F. Busby, op. cit., p. 5.

³The Why ... What ... and How of Soil Conservation Districts ... 6th Edition. The National Association of Soil Conservation Districts, League City, Texas, 1953, p. 4.

by the landowners in the district and the other two are appointed by the State Soil and Water Conservation Committee. Each district has a district-wide program and plan of action. Under State law, districts can accept materials and services from federal, state, and private sources, and they can acquire and manage property in the interest of conservation. Property acquired by the districts is exempt from taxation, and income that may result from the ownership and management of property must be used to further the cause of soil and water conservation in the district. Public and private funds may also be utilized by districts in the carrying out of their conservation programs. The State Soil and Water Conservation Committee divides a portion of its state appropriations among qualified districts and maintains supervision over the use of State money granted to them.

The Provisions of the 1965 Amendment (R115, H1187) expanded the powers of the districts in the water-resource area to include the prevention of flood-water and sediment damages, and to further the conservation, development, utilization, and disposal of water.

At present there are 45 soil and water conservation districts that cover the entire State. All districts, except one which is made up of Jasper and Beaufort Counties, are single-county districts and conform to county boundaries. The Soil Conservation Service of the United States Department of Agriculture furnishes technical advice and assistance to these districts to implement their conservation programs.

The Watershed Protection and Flood Prevention Act (Public Law 566, 83rd Congress, 68 Stat. 666 as amended) authorizes the Secretary of Agriculture to give financial and technical

aid to local organizations in planning and carrying out watershed projects for (1) flood prevention; (2) the agricultural phase of water management, and (3) other purposes, such as municipal and industrial water supplies.⁴

Soil and water conservation districts have taken the leadership in the sponsorship of small watershed projects in South Carolina. As of June 30, 1967, these districts, in cooperation with the Soil Conservation Service, had 22 watershed projects in operation, five approved for planning, 17 applications under examination, and 13 inactive water projects, Figure 2.⁵ Where woodland is involved in PL566 projects, the S. C. State Commission of Forestry assists in the planning process.

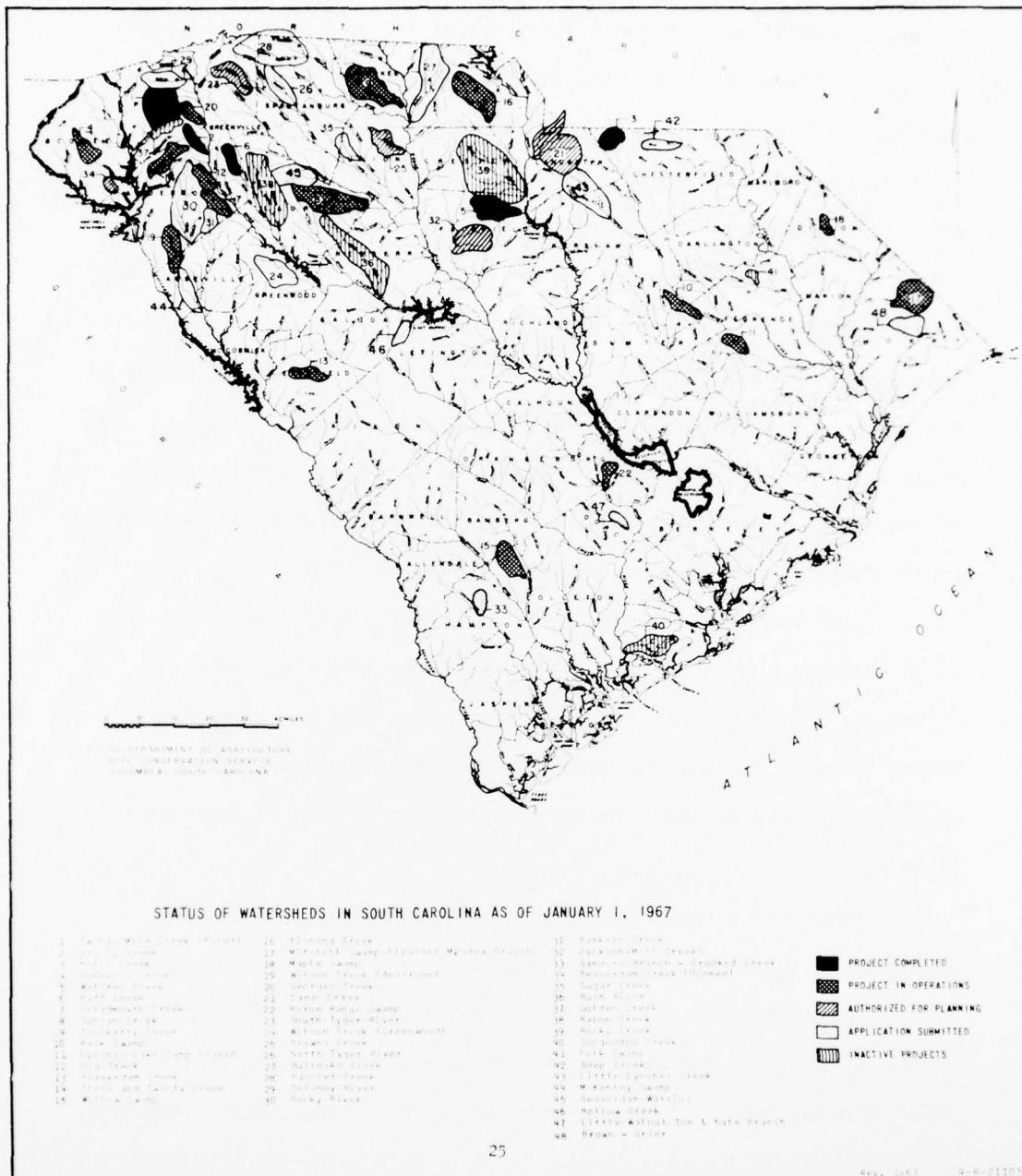
Besides the work being done on watershed projects, most districts are engaged in numerous programs that are related to water resource management or control. They have assumed the role of leadership in this area in the State.

Watershed Districts. An Act that provided for the formulation and operation of watershed districts in the State was passed by the General Assembly on April 11, 1967, and signed into law by Governor McNair the following day. This Act provides for the establishment of special districts with the sole purpose of developing watersheds within the districts.

Watershed districts under this law (R233, S217) and other acts are established through the initiative of local people. Landowners who desire

⁴ Soil Conservation Circular No. 4, U. S. Dept. of Agriculture, (Washington: Government Printing Office, August, 1965).

⁵ Personal interview with H. J. Dowdle, Assistant State Conservationist in charge of small watershed projects, Soil Conservation Service, Columbia, July 12, 1967.



to band together for watershed development purposes must first file an appropriate petition with the supervisors of the soil and water conservation district within which the watershed lies. Upon receipt of this petition, the supervisors are required to hold a public hearing. If there is sufficient interest and need, a referendum is held in which all qualified electors are eligible to vote. If a majority of the landowners favor the establishment of the district, and the soil and water district supervisors determine that the operation of such a district is administratively practicable and feasible, and that the establishment of the district would be in the interest of the public health, safety, and welfare of the area, the district would become a governmental subdivision of the State, a public body corporate and politic, upon proper recordation by the Clerk of Court and the State Soil and Water Conservation Committee.

Each watershed conservation district established under this Act is governed by a board of five directors chosen by the landowners within the district. If the supervisors of the soil and water conservation district approve, the board of directors may employ officers, agents, and other employees to carry on the work needed in the watershed district.

Watershed conservation districts have the power to acquire rights-of-way, easements, or land needed to carry out their programs through purchases, grants, or condemnation proceedings. They can also construct, repair, improve, operate, and maintain any works or improvements that are needed in the performance of their conservation programs. Costs incurred by these districts are to be paid primarily from funds obtained through a special tax on real property. These districts may,

under certain circumstances, borrow money or issue bonds or notes to supplement their tax revenues.

Watershed conservation districts already established in the State under prior acts may be reorganized under this law, which is intended to make watershed conservation districts uniform throughout the State. Watershed programs would, however, remain under the supervision of the soil and water conservation districts. As of August 4, 1967, several old watershed districts were in the process of organizing under the provisions of this law.⁶

Beach Preservation Districts. The 1962 Code contains authorization for two beach preservation districts. Sections 63-325 to 63-327 of the Code pertain to the Horry County Beach Preservation Association and Sections 63-291 to 63-296 authorize the Pawleys Island Erosion District (Georgetown County). Members of the governing bodies of these organizations are appointed by the Governor, upon the recommendation of the appropriate county legislative delegation. These organizations have the assigned function of preventing and controlling the erosion of beaches in their respective districts, and they are authorized to enter into agreements with federal and state agencies in this pursuit. The Pawleys Island Erosion District, in addition, has the power to acquire property through eminent domain proceedings and to erect erosion-prevention structures. It was also assigned taxing powers for revenue purposes.⁷

⁶Personal interview with Lewis E. Hendricks, Executive Secretary, State Soil and Water Conservation Committee, August 4, 1967.

⁷An interview with J. P. Stokes, Jr., Deputy Secretary of State, on August 4, 1967, revealed that the Governor has made no appointments to the governing boards of these bodies in the past 15 years.

There is no statutory authorization for such a district in Charleston County, but Section 63-211 of the 1962 Code authorizes the legislative delegation of the county, in the absence of an appropriate State agency, to enter into agreements with the federal government concerning the prevention and control of erosion on the beaches of the county.

Public Works Districts. Act number 743 of the General Assembly of 1934 provided that communities that were not incorporated could establish public works districts (1962 Code, Title 59, Chapter 5). Under this law communities could establish water supply, electric lights, fire protection, and sewage disposal districts by petitioning the Clerk of Court. Upon receiving the petition, the Clerk of Court calls a referendum. If a majority of the landowners within the proposed district vote in favor of the establishment of the district it becomes a body politic and may exercise the rights and privileges pertaining thereto. These districts are governed by three commissioners who are elected for six-year terms of office by the eligible voters in the district.

Districts organized under this law have the power of condemnation. They are also empowered to issue bonds and to obtain government loans. They have the power to charge fees for their services, and they can levy taxes on property.

Incorporated towns can acquire their own waterworks under Article VIII, Section 5, of the State Constitution, or they can issue exclusive franchises for water purposes under Section 58-151 of the 1962 Code.

The State has also authorized several water authorities for areas larger than a town. For example, the Bushy Park Authority (1962

Code, Sections 70-391 to 70-405), the Oconee Water Authority (1962 Code, Sections 70-451 to 70-463), and the Abbeville Water Authority (1962 Code, Sections 70-361 to 70-373). These authorities have the assigned function of acquiring and distributing water for domestic and industrial purposes in their respective service areas.

Miscellaneous Districts. Statutory authorization exists for the governing bodies of several counties to act as health and drainage commissions within their counties (1962 Code, Sections 18-71 to 18-76). Section 18-101 provides that the Governor, upon the request of the majority of a county legislative delegation, shall designate from three to five responsible residents of the county to act as the Sanitary and Drainage Commission.

Numerous other organizations authorized by State law are either directly or indirectly concerned with water resources. These organizations have functions ranging from drainage to erosion control and the improving of agricultural practices. Some of these organizations are:

Bamberg County Soil Improvement and Development Commission (1962 Code, Sections 63-201 to 63-208).

County Cooperative Soil Conservation Board, Edgefield County (1962 Code, Sections 63-251 to 63-264).

Agricultural Board, Fairfield County (1962 Code, Sections 63-271 to 63-275).

Agricultural Board, Greenwood County (1962 Code, Sections 63-311 to 63-320).

Agricultural Board, Newberry County (1962 Code, Sections 63-381 to 63-389).

Orangeburg Pasturage Development Commission (1962 Code, Sections 63-411 to 63-416).

Cooperative Soil Conservation Association Board, Saluda County (1962 Code, Sections 63-421 to 63-430).

Saluda County Pasturage Commission (1962 Code, Sections 63-441 to 63-445).

Interstate Commissions and Compacts

South Carolina is a member of two interstate commissions that are active in the field of water resources. These two commissions are the Atlantic States Marine Fisheries Commission and the Southeast Basin Inter-Agency Committee. The State also participates as a member of the Southeast States Forest Fire Compact Commission (1962 Code, Section 29-71, but this activity of the Commission is only indirectly related to water resource management and will not be discussed below.

The Atlantic States Marine Fisheries Commission. The Commission was established as an inter-state compact by Public Law 539, 77th Congress, 2nd Session, 1948. The purpose of the Commission is "the promotion of better utilization of the fisheries, marine, shell, and anadromous, of the Atlantic Seaboard." The Commission is made up of three Commissioners from each of the fifteen Atlantic Seaboard states plus a legal consultant from each of the four Commission sections. The United States Fish and Wildlife Service serves as the research agency for the Commission.⁸

South Carolina participates as a member of the Commission through statutory authorization found in Sections 28-201 to 28-205 of the 1962 Code. Section 28-201 states that the three Commissioners from South Carolina are to be the Director of the Division of Commercial Fisheries

⁸ Letter from G. Robert Lunz, Director, Division of Commercial Fisheries of the South Carolina Wildlife Resources Department and Member of the Atlantic States Marine Fisheries Commission, Columbia, March 20, 1967.

of the South Carolina State Wildlife Resources Department, a legislator, and a non-legislator, both of whom are to be appointed by the Governor with the advice and consent of the Senate. The Commission is interested in the preservation of the tidelands, and it is now in the process of making a detailed study of these areas.⁹

Southeast Basins Inter-Agency Committee. Public Law 85-850, which was passed on August 28, 1958, established the United States Study Commission, Southeast River Basins. This Commission developed a comprehensive plan for the conservation, utilization, and development of the land and water resources of part of the Southeastern United States. The Commission was made up of eleven members, with one from each of the four states in the area (Alabama, Florida, Georgia, and South Carolina), and a member from each of the seven principal federal land and water agencies: the Departments of Army; Commerce; Health, Education and Welfare; Agriculture; Interior and Labor, and the Federal Power Commission.

The Commission projected the future needs of this area (the Savannah River Basin was the only portion of South Carolina included), and developed a plan that would provide for these increased needs.¹⁰ The Southeast Basins Inter-Agency Committee is in essence a carry-over of the Study Commission. It is composed of one member from each of five member states (Mississippi has been added to the area) and a representative from each of the seven principal federal land and water agencies listed above. Its purpose is to coordinate the work being

⁹ Ibid.

¹⁰ U. S. Study Commission, Southeast River Basins. Plan for Development of the Land and Water Resources of the Southeast River Basins; Appendix I, Savannah Basin. 1963.

done in this area by different state and federal agencies, and to revise and expand the original plan to keep it up-to-date. A Resources Advisory Board with an office in Atlanta, Georgia has as its purpose the implementation of the plan. As of August 4, 1967, South Carolina was not an active member of the Resources Advisory Board.¹¹

South Carolina has no statutory law authorizing participation on the Resources Advisory Board, and as of August 1967, the State had not appropriated any funds to the Board. Funds have been established for this purpose, but whether these funds will be granted to the Resources Advisory Board depends upon the course of action that North Carolina and Virginia take regarding river basin planning.¹²

State Boards, Departments and Agencies

South Carolina has several boards, departments, committees, and commissions that are concerned with the control and management of water resources. Each of these agencies has its own authorization and purposes. A short discussion of each of these agencies concludes this Chapter. Addresses of agencies not located in Columbia are given.

South Carolina Public Service Authority. This Authority was established under the provisions of Act No. 887 of the Acts of the General Assembly of South Carolina for the year 1934 (1962 Code, Sections 59-1 to 59-14)

¹¹ Personal interview with Lewis E. Hendricks, Member of the Southeast Basins Inter-Agency Committee from South Carolina, Columbia, S. C., August 4, 1967.

¹² Proceedings of the Third Meeting of the Full Committee, South Carolina Water Resources Committee, Columbia, August 31, 1967.

for the purpose of developing "...The Cooper, Santee, and Congaree Rivers... as instrumentalities of intrastate, interstate, and foreign commerce and navigation; to produce, distribute and sell electric power; to reclaim and drain swampy and flooded lands; and to reforest the watersheds of rivers in this State."

The Authority is governed by a board of seven directors who are appointed by the Governor for seven-year terms. There must be a director from each of the six congressional districts of the State, and the chairman, who is a director from the State at large. These directors provide for the operation of the Authority and must report annually to the Advisory Board of the South Carolina Public Service Authority. The Advisory Board is composed of the Governor, the Attorney General, the State Treasurer, the Comptroller General, and the Secretary of State. The annual report of the Board of Directors is submitted to the General Assembly by the Governor.

The Authority is an agency and a part of the State government of South Carolina, with its main office in Moncks Corner. Original financing (1938-1942) was obtained from the United States through the Public Works Administration, now known as the Federal Works Agency. In 1951 and 1967 the Authority sold revenue bonds on the open market for the construction of steam generation and other electrical facilities. The Authority has also entered into lease-purchase agreements with a group of electrical cooperatives financed by loans from the Rural Electrification Administration. The State has no liability for any of the Authority's obligations. The Authority is tax exempt, but it makes payments to certain local governments in lieu of taxes. Unobligated net operating revenues are paid to the State annually (\$530,669 for fiscal 1966-67).

The main source of income of the Authority is from its sale of electricity.¹³

The Authority controls two large reservoirs with a combined water-surface area of some 171,000 acres. It also has control over 22,000 acres of land that surrounds these reservoirs. The Authority utilizes its reservoirs primarily for the generation of electricity. It has four electric generating plants with a total generating capability rating of 441,035 K.W., and a transmission system of some 1,750 miles of high-voltage electric lines that transport electricity to consumers in 35 counties in South Carolina.¹⁴

State Development Board. The South Carolina State Development Board was established by the provisions of Act 122, the Research, Planning, and Development Act of 1945, and amended by Act 256, 1959, (1962 Code Sections 9-301 to 9-312) for the purpose of "conducting an adequate statewide planning program...for the stimulation of economic activity to develop the potentialities of the State."

The Board is governed by seventeen Directors; one from each of the sixteen judicial circuits of the State, and one from the State at large, who is the Chairman. All appointments to the Board are by the Governor, with the advice and consent of the Senate, for terms of five years.

As of March 1967 the Board had a staff of some 70 full-time employees. According to S. W. Gable, Assistant Director of the Board, the Board is interested in water resources from an industrial point of

¹³ 31st Annual Report for the Fiscal Year Ending June 30, 1966, South Carolina Public Service Authority, Moncks Corner, S. C.

¹⁴ Ibid.

view. Records are maintained by the Board on the major streams with respect to both quantity and quality of flow. This information is essential to water-oriented industry and is maintained for that purpose.¹⁵

The Board has a Geology Division, but the Division does not collect data on the water supply of the State. Information on the water supply of the State is collected by the Geological Survey of the federal government. The Division of Geology maintains a matching-funds agreement with the federal Geological Survey so that it may have access to the data collected by that agency.¹⁶

South Carolina State Ports Authority. The South Carolina State Ports Authority was created by the General Assembly in 1941 (1962 Code, Sections 54-1 to 54-128), for the following nine purposes:

1. To develop and improve the harbors or seaports of Charleston, Georgetown, and Port Royal for the handling of water-borne commerce from and to any part of the State and other States and foreign countries;
2. To acquire, construct, equip, maintain, develop and improve such harbors or seaports and their port facilities;
3. To foster and stimulate the shipment of freight and commerce through such ports, whether originating within or without the State, including the investigation and handling of matters pertaining to all transportation rates and rate structures affecting the same;
4. To cooperate with the United States of America, and any agency or department, corporation or instrumentality thereof in the maintenance, development, improvement and use of such harbors and seaports in connection with and in furtherance of the war operations and needs of the United States;

¹⁵ Letter to the writer from S. W. Gable, Columbia, S. C., March 16, 1967.

¹⁶ Telephone conversation with Henry S. Johnson, Head of the Division of Geology, State Development Board, July 6, 1967.

AD-A041 399

CORPS OF ENGINEERS CINCINNATI OHIO
DEVELOPMENT OF WATER RESOURCES IN APPALACHIA. MAIN REPORT. PART--ETC(U)
JUN 70

F/G 8/6

UNCLASSIFIED

7 OF 7
AD
A041 399

NL



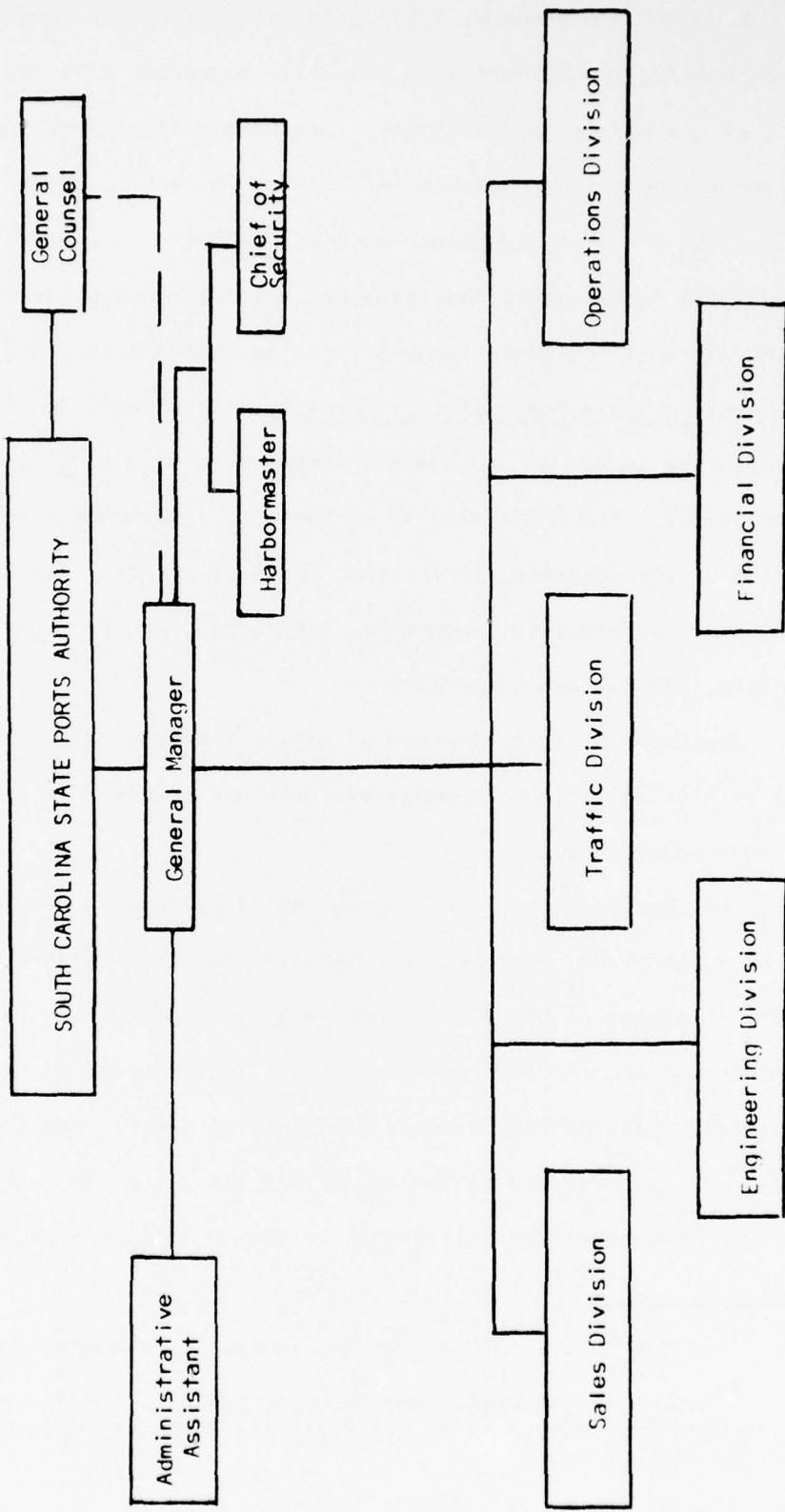
END
DATE
FILED
7 - 77

5. To accept funds from any of the counties of Beaufort, Charleston, or Georgetown, and to use them in such manner, within the purpose of the Authority, as shall be stipulated by the county and to act as agent or instrumentality for any of such counties in any matter coming within the general purpose of the Authority;
6. To act as an agent for the United States of America or any agency, department, corporation or instrumentality thereof in manner coming within the purpose or powers of the Authority;
7. To cooperate and act as co-assurer with the City of Augusta, Georgia, and the Georgia State Ports Authority in furtherance of the river development project known as the Savannah River Project Below Augusta;
8. To promote, develop, construct, equip, maintain and operate a harbor or harbors within this State on the Savannah River, and in furtherance thereof have all of the powers, purposes and authority given by law to the Authority in reference to the harbors and seaports of Charleston, Georgetown, and Port Royal; and
9. In general to do and perform any act or function which may tend to or be useful toward the development and improvement of such harbors and seaports of this State and to the increase of waterborne commerce, foreign and domestic, through such harbors and seaports.

The Ports Authority is governed by a board of seven members appointed by the Governor, with the advice and consent of the Senate, for terms of seven years. The Authority can accept loans and grants of money from any federal agency for any of its authorized purposes. It can also rent, buy, mortgage, and dispose of property as is needed. Property acquired by the Authority is exempt from taxes.

In order to accomplish its purpose the Authority employs a staff headed by a general manager and is organized into five divisions, Figure 3. It maintains a head office in Charleston, and operates ports and terminal facilities at Charleston, Georgetown, and Port Royal. The Authority also maintains cargo-solicitation offices in New York, Chicago, and Greenville, South Carolina.

Figure 3. Organizational Chart of South Carolina State Ports Authority



According to James M. Tobias, Assistant for Development, State Ports Authority, the Authority is primarily concerned with the navigational aspects of the harbors of the State. Statements of desired improvements are given to the United States Army Corps of Engineers, which is in charge of the dredging and maintenance of channels. The Authority also serves as the local agency that provides the spoil areas for the silt that the Corps of Engineers removes from the channels in the State.¹⁷

South Carolina State Commission of Forestry. The Commission of Forestry was created by an Act of the General Assembly in 1927 (1962 Code, Section 29-1 to 29-30). The Commission is composed of five members who are appointed by the Governor for six-year terms of office. The Governor must appoint two practical lumbermen, one farmer, the President of Clemson University, and one member at-large.

The Commission is financed primarily through State appropriations, but it is also authorized to cooperate with and receive aid from other State and Federal agencies.¹⁸

The Commission of Forestry provides fire control over some 12,050,000 acres of forest land, operates four seedling nurseries with a combined annual capacity in excess of 60 million seedlings, and employs 541 persons, including 61 foresters. The Commission has acquired 123,494 acres of heavy cut-over and generally misused land and has incorporated these lands into State Forests.¹⁹ It also renders advice and direct assistance to landowners in the proper management and utilization of forest lands, marks and tallies

¹⁷ Letter to the author from Mr. Tobias, Charleston, April 4, 1967.

¹⁸ Report of the State Commission of Forestry for the Year July 1, 1965, to June 30, 1966, John R. Tiller, State Forester (Columbia: State Budget and Control Board).

¹⁹ Ibid.

forest trees for cutting at a nominal cost to landowners, conducts forest management demonstrations, and maintains surveillance for insect and disease outbreaks and offers advice and assistance to landowners to prevent losses.

The principal activity of the Commission in the area of water-resource management is through its reforestation responsibilities in small watershed projects authorized by Public Law 566. The Commission also cooperates in all the conservation programs of all soil and water conservation districts in the State through a written agreement with each district.²⁰

South Carolina Wildlife Resources Department. The State Wildlife Resources Department was established by Reorganization Plan Number Eight and approved as Concurrent Resolution S.425 in the regular legislative session of 1948 (1962 Code, Sections 28-93 to 28-149). The basic function of the Department, according to Jefferson C. Fuller, Jr., Chief of Fisheries, is to conserve and manage the wildlife resources of the State to provide and maintain optimum fishing and hunting.²¹

The Department is supervised and directed by the South Carolina Wildlife Resources Commission. The Commission is composed of seven commissioners who are appointed by the Governor for terms of six years

²⁰ Letter to the author from John R. Tiller, State Forester, Columbia, S. C., March 22, 1967.

²¹ Letter to the author from Mr. Fuller, Columbia, S. C., March 20, 1967.

with the advice and consent of the Senate. There must be one Commissioner from each of the six congressional districts of the State and one commissioner at-large.

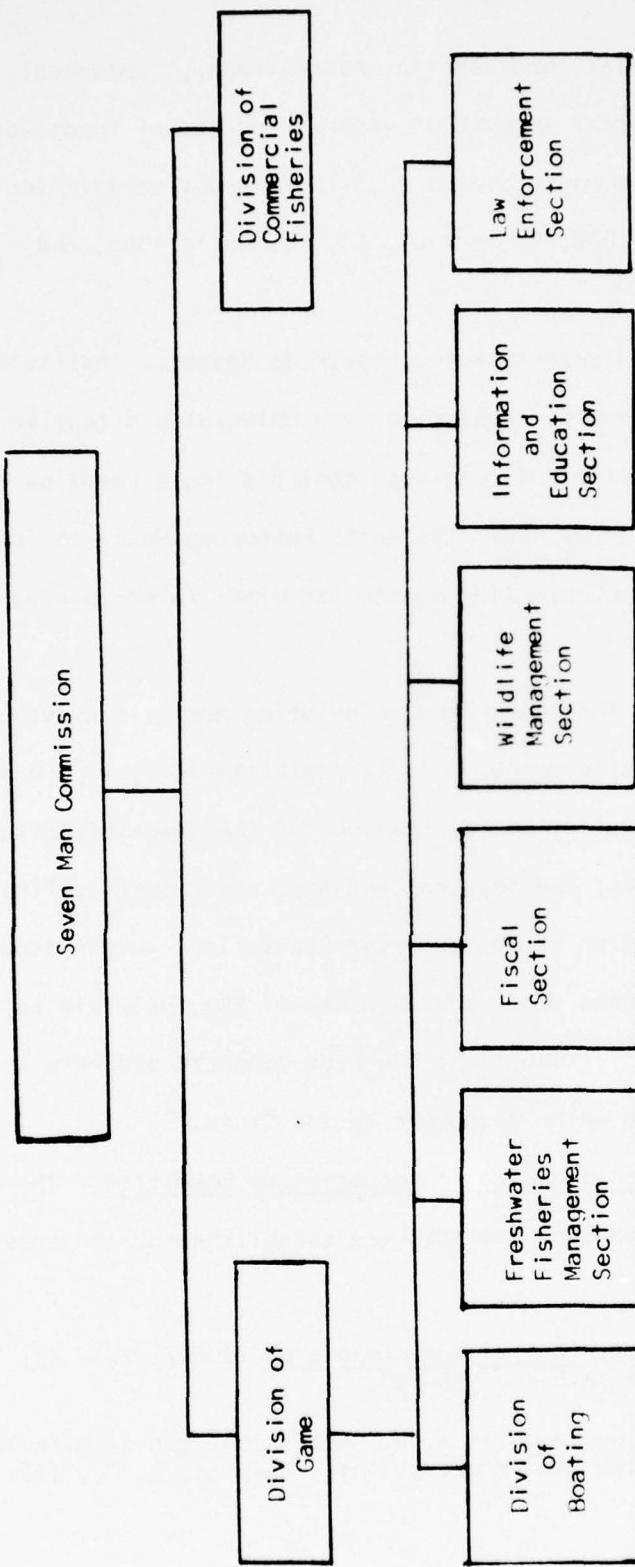
The Department has two main divisions, the Division of Game and the Division of Commercial Fisheries. The Division of Game has several sections, Figure 4. The Department also operates Bear Bluff Laboratories at Wadmalaw Island, which is 25 miles southwest of Charleston. The Laboratory was established in 1946 to develop the marine resources of the State through research and education.

The Wildlife Resources Department, as of March 1967, employed approximately 250 persons. This staff was performing various operations which included research, management, enforcement of regulations, determining practical regulations, land acquisitions, building lakes, building boat ramps, operating hatcheries, conducting in-service training schools, boating safety, dispersing information, and coordinating federal funds.²²

Clemson University Water Resources Research Institute. The Water Resources Research Act of 1964, Public Law 379, 88th Congress, authorized funds that could be used by an institute of a land-grant university (or some other university designated by the state legislature) in the studying of water resource problems. The Act provides that funds be granted to each approved State institution for research on topics that include the hydrologic cycle, the supply of and the demand for water, the conservation and best uses of the available supply of water, methods of increasing the supply of water, and other topics relating to the

²² Ibid.

Figure 4. Organizational Chart of South Carolina Wildlife Resources Department.



economics, legal, social, engineering, recreational, biological, geographical, and ecological aspects of water. Additional funds were authorized that states could use on a dollar-for-dollar matching-funds arrangement (\$3,000,000 in 1967, \$4,000,000 in 1968, and \$5,000,000 in 1969).²³

The Clemson University Water Resources Research Institute was established by the Board of Trustees of the University effective May 1, 1964. The Institute directs and controls South Carolina research projects that are financed under the Water Resources Research Act of 1964 and serves as a coordinating agency for other water-related research.

The Institute functions through existing administrative units on the Clemson University campus. It is administered by a Directorate which reports to the Policy Board, composed of the Deans of Agriculture and Biological Sciences, Engineering, and Arts and Sciences, Figure 5.

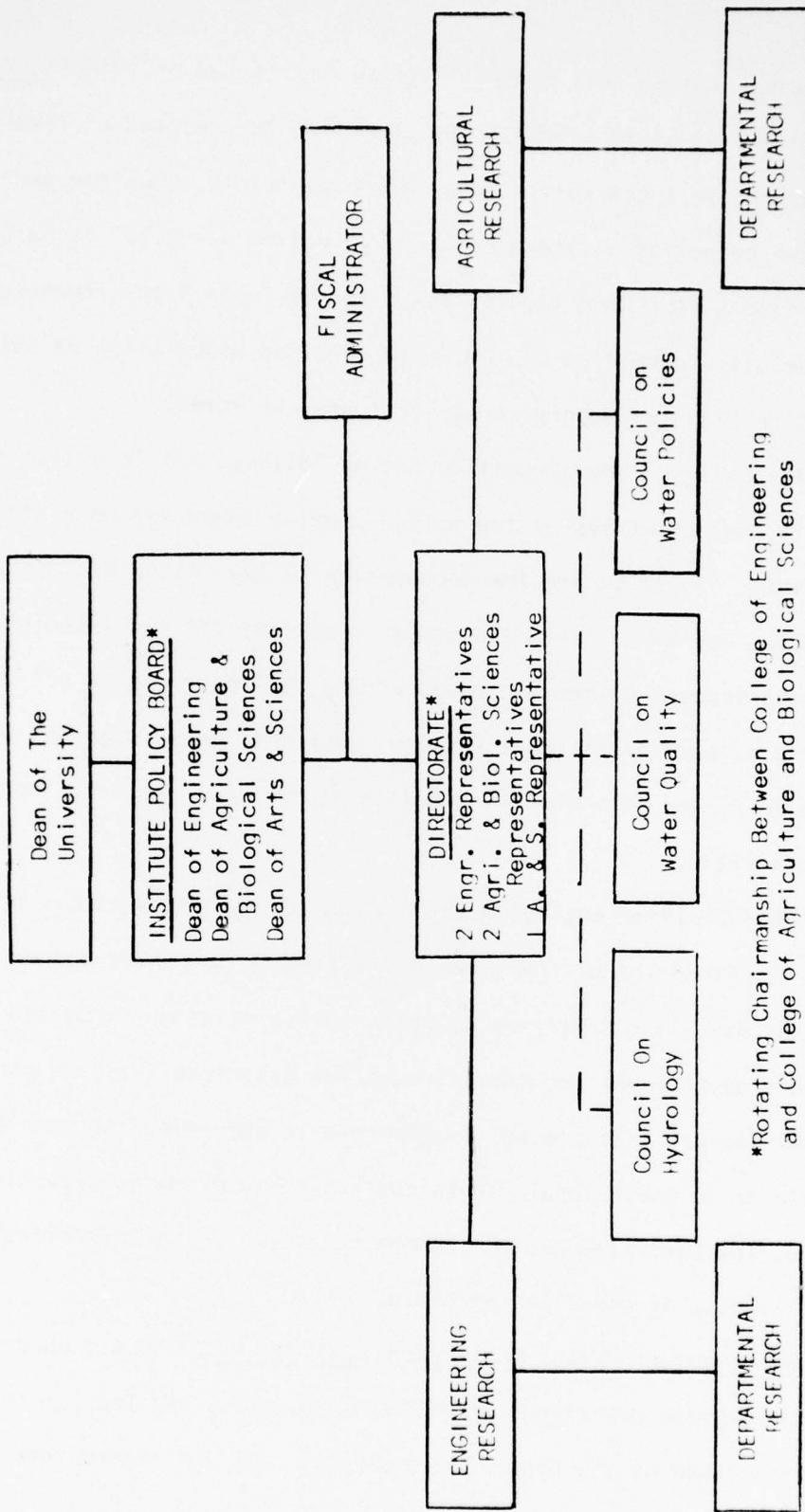
Fourteen research projects concerning various water-resource problems were in progress under the auspices of the Institute as of August 1967, Appendix I. The Institute also conducts seminars and publishes materials on water resources in the State.²⁴

South Carolina State Soil and Water Conservation Committee. The State Soil and Water Conservation Committee was established by the provisions

²³United States, Federal Code Annotated (1965), Vol. 42, "The Public Health and Welfare," pp. 536-537.

²⁴Personal Interview with A. W. Snell, Chairman of Directorate, Clemson University Water Resource Institute, Clemson, S. C., July 13, 1967.

Figure 5. Organizational Chart of Clemson University Water Resources Research Institute.



*Rotating Chairmanship Between College of Engineering
and College of Agriculture and Biological Sciences

of the South Carolina Soil Conservation Districts Law of 1937 (1962
Code, Sections 63-61 to 63-70). The Committee is composed of five
supervisors of soil and water conservation districts, one from each
of the five conservation areas created by Section 63-61.1. Members
are appointed to the Committee by the Governor, upon the recommendation
of the executive committee of the South Carolina Association of Soil
Conservation District Supervisors, for four-year terms.

The duties of the Committee are as follows: (1) To assist and
coordinate the activities of the soil and water conservation districts
in the State; (2) to secure the cooperation of the United States and
its agencies and other state and county agencies; (3) to disseminate
information throughout the State concerning the conservation activities
of districts, and (4) to receive gifts, appropriations, land and equip-
ment and to manage them for the benefits of the soil and water conser-
vation districts.

The Committee employs a staff which is headed by an Executive
Secretary. Financing of Committee activities is primarily through State
appropriations. The Committee has been active in water resources conser-
vation and development programs through the districts which it supervises.
The Committee has also played a major role in informing the people of
the State as to their legal rights concerning water resources. In
addition, the Committee has and is making studies of State watersheds and
the soil and water needs of the State.

State Department of Parks, Recreation, and Tourism. An Act which pro-
vided for a State Department of Parks, Recreation, and Tourism (R185,
S170) was passed by the General Assembly in 1967 and signed into law by

Governor McNair on March 20. The Department is governed by a Commission known as the State Parks, Recreation, and Tourism Commission. The Commission is composed of eleven members with a member coming from each of the six congressional districts of the State and one at-large member who is the Chairman. Commissioners are appointed by the Governor with the advice and consent of the Senate. There are four ex officio members: the Director of the State Development Board, the Director of the South Carolina Department of Archives and History, the State Forester, and the Director of the Division of Game of the South Carolina Wildlife Resources Department.

The Division of Parks of the State Forestry Commission, the Travel and Information Department of the State Development Board, and the Division of Outdoor Recreation of the South Carolina Wildlife Resources Department have transferred their duties and powers to this Department. All funds allocated to the various Departments for parks, tourism or recreation were reallocated to this new Department.

The Department has duties which include the promotion of the tourist attractions of the State, the development and expansion of the State Park System, the inventorying of the existing parks and outdoor recreational resources of the State, and the estimating of the future needs of these types of resources.

The Department is composed of the Division of Travel and Tourism which is responsible for the promotion of the travel and tourist industry, and the Division of Parks and Recreation which is responsible for the promotion and development of the State Parks and their recreational facilities. The Department is authorized to charge a reasonable fee for

the use of the recreational facilities that it maintains. Revenue collected from this source will supplement annual appropriations from the State. The present State Park System is composed of 28 State parks and historical sites that occupy 50,061 acres of land.

South Carolina State Highway Department. The State Highway Department was established by the General Assembly in 1917 (1962 Code, Title 53, Chapter 2), and was assigned the function of the "systematic planning, construction, maintenance, and operation of the State Highway System." It is governed by the State Highway Commission which is composed of sixteen members, one from each of the sixteen Judicial Circuits of the State. Commissioners are elected by the State legislators of the judicial circuit that they represent for four-year terms.

The State Highway Department becomes involved with water resources through its construction and maintenance programs. According to J. D. McMahan, Jr., Assistant State Highway Engineer, the Department regards water as a "common enemy," and has to make provisions to protect its roads and bridges from it.²⁵

The State Highway Department is the agency that the State General Assembly has chosen to combat beach erosion. The State first appropriated funds for this purpose in 1948, and considerable work has since been done along the beaches at Folly Beach and at Pawleys Island. The State Highway Department is also requested to cooperate with other State and federal agencies that have water resources responsibilities.²⁶

²⁵Personal interview, Columbia, S. C., August 4, 1967.

²⁶Ibid.

South Carolina Public Service Commission. Article IX, Section 14 of the State Constitution of 1895 provided for a commission to be known as "The Railroad Commission." The Provisions of Act Number 18 of the General Assembly of 1935 changed the name of this Commission to the South Carolina Public Service Commission (1962 Code, Title 58, Chapter 2). The Commission is composed of seven members, one from each of the seven Commission Districts as defined in Section 58-52, 1962 Code, who are elected by the General Assembly to serve four-year terms.

The activities of the Commission in the water resource area are through its jurisdiction over electric light and power companies, transportation companies, and sewage and water companies. It has the power to regulate and control the activities of these types of companies.

State Board of Health. The State Board of Health was created by the General Assembly on December 23, 1878, and was assigned the function of being "the sole advisor of the State in all questions involving the protection of the public health," (1962 Code, Sections 32-1 to 32-39). The Board is composed of the South Carolina Medical Association (an organization of the physicians of South Carolina), the State Comptroller General, and the Attorney General.

The Board is governed by an Executive Committee which is composed of seven members from the South Carolina Medical Association, one member from each of the State Nurses Association, the State Dental Association, the State Veterinarians Association, and the State Pharmaceutical Association. Membership on the Executive Committee is by gubernatorial appointment upon the recommendation of the Association that the member represents. The Governor also appoints the State Health Officer upon the

recommendation of the Executive Committee. The State Health Officer is the Secretary of the Executive Committee and the chief administrative officer of the State Board of Health.

The State Board of Health is composed of several divisions and sections; in addition, it operates 46 County Health Departments. The Division of Sanitary Engineering is the division of the Board that is primarily concerned with the health laws of the State concerning water. Its duties include the supervision of public water supplies and sewage systems, the supervising of public bathing places, and the certifying of water supplies and watering points used by interstate carriers. Until the Pollution Control Authority was established in 1950, the Board of Health was the only State agency with water responsibilities.

The Board is also assigned the responsibility of setting standards for the water that boarding houses, hotels, inns, and restaurants must provide for their guests. Samples of water that water suppliers make available to their customers, guests, or employees are analyzed by bacteriologists in the Division of Laboratories to determine if the State standards are being met.

South Carolina Pollution Control Authority. The South Carolina Water Pollution Control Authority was established pursuant to the provisions of Act Number 873 of the State General Assembly of 1950. The Act was amended in 1965 giving the Authority control over air pollution, and changing its name to the South Carolina Pollution Control Authority. Though the Authority is an independent agency it operates within the framework of the State Board of Health.

The Authority is composed of seven members who are appointed by the Governor for terms of four years, two members who are named by the Executive Committee of the State Board of Health from within its member-

ship, and the State Health Officer who serves ex officio and is the Chairman. Of the seven members appointed by the Governor, one must be a cotton manufacturer, one must be from the pulp and paper industry, one must be from the South Carolina Wildlife Federation, one must be from the Municipal Association of South Carolina, one must be a farmer, and two must represent labor (1962 Code, Sections 70-101 to 70-139).

The Authority has the "Jurisdiction to abate, control and prevent the pollution of the waters and air of the State consistent with the protection of the health and physical property of the people...." The Authority is administered by an Executive Director, and it operates five laboratories. It also has access to the facilities of the State Board of Health.

The general powers of the Authority include the minimizing of new pollution, the abating of existing pollution, the holding of public hearings and the assessing of penalties deemed necessary, the issuing of orders to correct existing pollution discharges, the instituting of court action to compel compliance with the pollution laws of the State, the power to issue or deny permits to discharge, the approving or disapproving of treatment facilities plans and specifications prior to construction, the power to distribute federal funds made available for pollution control purposes, and the power to approve projects that are to be financed by federal grants.

The Authority has adopted a system of stream classification standards. Streams are classified according to these standards after the holding of a public hearing called by the Authority.

The Authority is financed by federal and state funds. Federal funds are made available to the State under the provisions of Public Law

660, 84th Congress, 2nd Session, 1956, through a matching-funds agreement. The Authority is also instructed to take the appropriate actions necessary to secure the benefits of the Federal Water Pollution Control Act, Public Law 845, 80th Congress, 2nd Session, 1948, and other federal and State acts concerning pollution.

South Carolina Water Resources Planning and Coordinating Committee. An Act to establish a State Water Resources Planning and Coordinating Committee was passed by the General Assembly on February 28, 1967, and signed into law by Governor McNair on March 1, 1967. The Committee is composed of eighteen members, ten of whom are appointed by the Governor for three-year terms. Of the ten appointed by the Governor, three must represent the interest of Agriculture, three must represent the interest of municipalities, three must represent the interest of industry, and one must represent salt-water interests. The heads of the State Department of Agriculture, the South Carolina Pollution Control Authority, the South Carolina Wildlife Resources Department, the South Carolina State Forestry Commission, the State Soil and Water Conservation Committee, the State Development Board, the Clemson University Water Resources Research Institute, and the State Highway Department are members, ex officio.

The Committee is administered by an Executive Director and his staff. Its duties are: to formulate a comprehensive water resources policy for the State; to review the actions and policies of State agencies with water resources responsibilities; to determine if actions of State agencies are consistent with the State comprehensive water plan; to review projects, plans, or programs of federal aid affecting the control or use of water in the State and to make the appropriate recommendations, and

to recommend to the General Assembly any changes of law required to implement the declared policy of the State on water resources.

This Committee replaces the South Carolina Interagency Council on Water Resources. As of August 1967 the Committee is in the process of being organized. Work toward the fulfilling of the duties assigned to it should begin shortly.

Other State Groups. South Carolina has a State Water Resources Advisory Committee. This Committee was established by Governor R. E. McNair by executive order in 1966. It is composed of some 37 members who represent different interests throughout the State. The Committee advises the Governor on matters pertaining to water resources.

The Senate standing committees on Agriculture, Fish, Game, and Forestry, and Natural Resources all have interests in the water resources of the State. The House of Representatives has a standing committee on Agriculture and Conservation, which is also concerned with water resources.

CHAPTER IV

POLICIES AND PROGRAMS

Policy

The State of South Carolina has issued several policy statements relevant to water and related land resources. In the Drainage District Act of 1911 the General Assembly made the following policy statement:

It is hereby declared that the drainage of swamps, the drainage of surface waters from agricultural lands and the reclamation of tidal marshes shall be considered a public benefit and conducive to the public health, convenience, utility and welfare (1962 Code, Section 8 - 201).

The policy of the State toward a decentralization of powers is evident in the above-mentioned law. The policy statement implies that drainage is a benefit to the State as a whole, but the implementing of drainage districts and drainage programs was left to local drainage districts. The local districts were to be financed in toto by the land-owners in the district.

The supplying of water and the disposal of sewage has been left to local groups. Under the provisions of Act Number 743 of the General Assembly of 1934, unincorporated communities may form electric light, water supply, fire protection, and/or sewage disposal districts. Article VIII, Section 5 of the State Constitution of 1895 provides that cities or towns may acquire, construct or purchase, and operate waterworks and lights systems. Title 58, Section 151 of the 1962 Code allows towns which do not own waterworks to issue exclusive franchises for the furnishing of water. In this area, public works, the State has assumed a role of

authorizing and checking, but it has made no effort to centralize these operations.

In the Soil Conservation Districts Act, which was passed in 1937, the General Assembly declared the interest of the State in conservation by making the following declaration:

It is ... declared to be the policy of the General Assembly to provide for the conservation of the soil and of the soil resources of this State and for the control and prevention of soil erosion and thereby to preserve natural resources, control floods, prevent impairment of dams and reservoirs, assist in maintaining the navigability of rivers and harbors, preserve wild-life, protect and promote the health, safety and general welfare of the people of this State (1962 Code, Section 63-53).

This declaration is significant in that the General Assembly decided that conservation was a matter of State concern, but the implementing of conservation programs was left to the local soil conservation districts. This law, however, did indicate a movement by the State to increase its involvement in resource development programs. The law established a State Committee to co-ordinate and advise the districts, and it made provisions that allow a small amount of State appropriations to be used by the local districts.

The State, however, in Act Number 887 of the General Assembly of 1934, which established the South Carolina Public Service Authority, followed a different approach to water resources development. This act, in essence, created a State corporation that was authorized to develop the Cooper, Santee, and Congaree Rivers for commerce and navigation; the production and sale of electric power; the reclamation and drainage of swampy and flooded land, and the reforestation of these watersheds.

The breadth and diversity of powers given this agency were unprecedented in the State.

Act Number 626 of the General Assembly of 1942 (1962 Code, Title 54, Chapter 1) created the State Ports Authority. The Authority was given jurisdiction over the harbors or seaports within the State and over the waters and shores of such harbors or seaports and over parts of tributary streams flowing into such harbors or seaports in which tides ebb and flow, and extending to the outer bar at such harbors or seaports. The Act had the effect of centralizing the promotion, maintenance, development, construction of, and the operation of harbors or seaports in the State in the hands of one State agency.

The South Carolina Water Pollution Control Authority, changed in 1965 to the South Carolina Pollution Control Authority, was established in 1950 and given complete power to abate and prevent water pollution in the State (1962 Code, Sections 70-101 to 70-139). The Authority was assigned the task of safe-guarding the waters of the State from pollution by minimizing any new pollution and abating existing pollution. The State defined "waters" in this Act to include "bays, sounds, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic Ocean within the territorial limits of the State and all other bodies of surface or underground water, natural or artificial, public or private, inland or coastal, fresh or salt, which are wholly or partially within or bordering the State..." (1962 Code, Sections 70-101). Thus, the Authority was given power over all water in the State. Even though the State

does not own the beds of non-navigable streams,¹ it definitely asserted its power to control pollution in this type and all other streams in the State.

An "Act to Create the South Carolina Water Resources Planning and Coordinating Committee, and to Provide for Its Duties and Responsibilities" (R88, H1108) became law as of March 1, 1967. This Act contained the latest policy statement of the State on water resources. The General Assembly embodied into the Act the following statement concerning water resources.

...It is in the interest of the public welfare that a coordinated, integrated State water resources policy be formulated and means provided for its enforcement, that plans and programs for the development and enlargement of the water resources of the State be devised and promoted and that other activities designed to encourage, promote and secure the maximum beneficial use and control of such water resources be coordinated by a committee which, in the carrying out of its functions, shall give proper and adequate considerations to the multiple use and control of such water resources with an impartiality of interest except that which is designed to best promote the public welfare generally.

This statement indicates that the State will be more involved in water resources development and management in the future. Although several aspects of water resources such as drainage, watershed development, and water supply will probably remain within the responsibilities of local groups, the State will, evidently, assume a more aggressive role as an advisor and coordinator.

The financing of programs related to water resources has also been left, generally, to the districts or communities. The State has, in almost every instance, allowed these districts to levy taxes, issue

¹Latimer, op. cit.

bonds, and/or borrow money. Almost all public works, conservation, and development districts enjoy tax exemptions on the property they own. The State also has a policy of giving governmental sub-divisions concerned with water resources the power of eminent domain. In fact, Section 25-52 of the 1962 Code grants the power of eminent domain to all State authorities, commissions, boards, or governing bodies, established by the State for navigational reasons, commerce, power generation and distribution, drainage and reclamation, reforestation, and health reasons.

The State has also encouraged the commissions, boards, authorities, and districts that it has established to cooperate with the federal government and agencies thereof. Most of these agencies are allowed to take advantage of federal grants and loans. The State has made a policy of participating in matching-funds agreements with the federal government. The State Pollution Control Authority, Clemson University Water Resources Research Institute, The Geology Division of the State Development Board and other agencies have been and are taking advantage of such arrangements.

Agencies are also encouraged by the State to cooperate with federal agencies in their programs of work. The Soil Conservation Service and the soil and water conservation districts exemplify such encouragement. These agencies work hand-in-hand on local conservation programs.

Programs

Planning Programs. The State has either directed or taken part in several resources planning programs that have involved water resources. A South Carolina representative was a member of the United States Study Commission,

Southeast River Basins. This Study Commission projected the resource needs of this area, which included only that portion of South Carolina lying within the Savannah River Basin. A plan was then developed that would employ land and water resources in such a way that the projected needs could be satisfied.²

The State has requested and is participating in "The Big Picture," which is a detailed study of the portion of the Santee River Basin which lies in South Carolina. In June 1967 the North Carolina portion of the Santee Basin was authorized for study at the request of North Carolina. The total Basin Study is to be completed in 1972. The Study is being conducted by the Santee River Basin Study Group. Members of the Group are employees of the United States Department of Agriculture, and the Soil Conservation Service has been designated as the leader of the group. The State Soil and Water Conservation Committee also works with the Study Group. Type IV River Basin Study is expected to be completed by 1972. It will provide a look at the resources of the study area, and will give recommendations which the State can use as a guide in meeting the water needs of this area until the year 2020.³

The South Carolina Wildlife Resources Department completed in December 1966 a comprehensive outdoor recreation plan for the State. This plan was worked out by the Division of Outdoor Recreation. The Division inventoried the existing outdoor recreational facilities and tried to determine the demand for such facilities. Future needs for outdoor recreational facilities were projected and a program and time

²Plan for Development of the Land and Water Resources of the Southeast River Basins; Appendix I, Savannah River, op. cit.

³The Big Picture - A Study of the Santee River Basin in South Carolina, An Information Bulletin distributed by the State Soil and Water Conservation Committee.

schedule that provide the facilities to meet the projected increases were developed.⁴ Since this study was conducted, the Division of Outdoor Recreation of the State Wildlife Resources Department has been incorporated into the newly-created State Department of Parks, Recreation, and Tourism. Thus, this new Department will assume the initiative in the area of outdoor recreation.

The State has no comprehensive plan for the development of its water resources. However, the fledgling South Carolina Water Resources Planning and Coordinating Committee has been assigned the task of developing such a plan. A grant of federal funds has been received for this purpose and work is now in progress.

Research Programs. Most research dealing with water resources in South Carolina is being done by the State-supported institutions, primarily Clemson University and the University of South Carolina. Water Resources Research In South Carolina, prepared by the South Carolina Water Resources Advisory Committee, September 1966, listed 24 water resources research projects in progress at Clemson University, eight at the University of South Carolina, and four projects which were being conducted by federal agencies in the State.

The Clemson University Water Resources Research Institute supervises the projects that are financed by funds made available under the Water Resources Research Act of 1964. The Institute solicits proposed projects from other colleges and universities in the State as well as from the different departments at Clemson University. Appendix III is

⁴Outdoor Recreation For South Carolina, The State of South Carolina Wildlife Resources Department, Outdoor Recreation Division, (Columbia: R. L. Bryan Co., December 1966).

a listing of the projects presently in progress under the direction of the Water Resources Research Institute.

Several State agencies have water-related research projects in progress. The primary objectives of these studies are related to plant growth, fish reproduction, health, and control of obnoxious aquatic plants. On Wadmalaw Island the State also maintains Bear Bluff Laboratories which is primarily a research institute for marine resources. A considerable portion of the research done on water resources in the State is financed at least partially by federal funds.

Construction and Development Programs. The State has two major programs in this area. One is conducted by the South Carolina Public Service Authority which is a legal sub-division of the State government. As previously noted, this Authority is engaged primarily in hydro and thermal generation of electricity. It has other duties, however, such as flood control, recreation, reforestation, and navigation. The Authority listed its total assets on June 30, 1966 as \$107,288,573.⁵

The other major State endeavor in the construction and development related to water resources is through the State Ports Authority. The Authority has the general function of developing and operating the navigable waters of the State for commercial shipping. To accomplish this purpose the Authority operates terminal facilities at the ports of Charleston, Georgetown, and Port Royal. Its assets, which include an export grain elevator, several piers, warehouses, and buildings, were valued at \$31,469,765.50 as of June 30, 1966.⁶

⁵31st Annual Report for the Fiscal Year ending June 30, 1966, op. cit., p. 41.

⁶Annual Report to the South Carolina General Assembly, State Ports Authority, Fiscal Year ending June 1966.

CHAPTER V

COMPARISONS WITH OTHER STATES

Law

The laws of South Carolina that control the rights to use water have been developed largely through judicial processes. Basically, the courts of the State have applied the reasonable-use riparian doctrine to surface water; the common-law rule that "the owner of the soil owns to the sky and to the center of the earth" to ground water, and the common-enemy doctrine to questions involving diffused surface water.

The legal position of South Carolina on water, except for its stand on diffused surface water, is very similar to that of the other states east of the Mississippi River, excepting the State of Mississippi. South Carolina, in applying the common-law rule that regards diffused surface water as a common-enemy, differs from most eastern states in this respect. Most eastern states apply the civil-law doctrine. The civil-law doctrine, in general, prohibits the obstruction of the flow of diffused surface water, while the common-law doctrine allows the obstruction of such water.¹

Basically, two doctrines govern the use of surface water in the United States. The prior appropriation doctrine controls the use of such water in states west of the 100th meridian and in the State of Mississippi, and the reasonable-use riparian doctrine governs the use of surface water in the other states east of the 100th meridian, with the exception of Iowa, which adopted a system of water-use permits in 1957.

¹Royal G. Shannonhouse, "Common Law Rules Regarding the Use of Surface and Ground Water in the Southeast," Water Law and Policy in the Southeast, the proceedings of the Southeastern Water Law Conference, Athens, Georgia, November 7-10, 1961, published by the Institute of Law and Government, University of Georgia, pp. 16-18.

Under the doctrine of prior appropriation, the first person to put the water to beneficial use has the right to continue using the same amount (for the same purpose at the same place). This system requires a state agency to administer it. This state agency records water rights which carry with them the right to use a definite quantity of water. Water rights under the doctrine of appropriation are lost by non-use, and during periods of drought senior (older) rights have priority over junior (younger) rights.² The reasonable-use riparian doctrine was defined in Chapter II, page 18.

Both the reasonable-use riparian and the appropriation doctrines are subject to many criticisms. For a discussion of the merits and demerits of the two doctrines see The Report of the President's Water Resources Policy Commission, Vol. III, Water Resources Law, or Chapter IX of Hirshleifer, De Haven, and Milliman's Water Supply.

A valid criticism of the reasonable-use riparian doctrine, as applicable to South Carolina, is that water can be used only by riparian owners on riparian lands, and a riparian owner cannot transfer his rights to a non-riparian owner who could use the water profitably. However, the reasonable-use riparian doctrine has some virtues that the appropriation doctrine does not have. For example, the fact that reasonable use is not defined as a specific quantity gives this system flexibility which is not a characteristic of the appropriation system. This view assumes that a jury will be progressive in its determinations; therefore, new and improved water uses would be found to be reasonable uses.

²J. Hirshleifer, J. C. De Haven, J. W. Milliman, Water Supply (Chicago: The University of Chicago Press, 1963), p. 233.

Most states, including appropriation and reasonable-use states, have modified these doctrines by statutory means to meet their particular needs. The South Carolina General Assembly, through statutory grants, has allowed several non-riparian owners to divert and use portions of the surface water of the State. These grants constitute the only statutory enactments that are not in accordance with the reasonable-use riparian doctrine as embraced by the State Courts.

Since growing urban-industrial areas often find it necessary to obtain water supplies from considerable distances, and since commercial agriculture may involve greater use of water in the future, the reasonable-use riparian doctrine does not appear to be adequate for the continual development and growth of South Carolina. The State can remedy this inadequacy through one of two ways. It can either adopt the doctrine of appropriation, or it can modify the reasonable-use riparian doctrine through statutory enactments.

Mississippi has been the only eastern state to embrace the appropriation doctrine. A bill that would have allowed the appropriation of the surface water of South Carolina was brought before the General Assembly of 1954, but it failed to pass. Several eastern states have chosen to modify their reasonable-use riparian doctrine by statutory means while retaining the basic framework of the system.

For example, Maryland has given its Department of Water Resources the power to appropriate, through the issue of permits, the surface and underground water of the State that exceeds that amount needed by riparian owners.³ Several other eastern states

³ Maryland State Laws, Policies and Programs Pertaining to Water and Related Land Resources, preliminary draft, Ohio River Basin Comprehensive Survey, State of Maryland Planning Dept., August 1966, p. 10.

allow appropriations by designated agencies under certain circumstances.

Florida has considerably modified its reasonable-use riparian doctrine through statutory enactments. The State of Florida adopted a Water Resource Law in 1957 which created a Department of Water Resources within the State Board of Conservation. This law gave the Board the power to appropriate water that is in the excess of the average minimum flow of a watercourse, above the average minimum level of a lake, and above the average minimum elevation of a ground water supply. Thus, the Florida system maintains the riparian framework, but it also allows for a considerable amount of appropriation.⁴

State Agencies

South Carolina has some thirteen different agencies that have some degree of water-resource responsibilities. In addition, research on water-resource problems is conducted at Clemson University and at the University of South Carolina, both of which are State-supported institutions.

Thus, South Carolina has distributed water-resource responsibilities among numerous, separate, and independent agencies. For a short period of time prior to March of 1967, the South Carolina Inter-agency Council on Water Resources, which was composed of representatives of eight different State agencies, had the responsibility of coordinating all water-resource programs authorized by the State. This duty was

⁴Robert H. Marquis, "Statutes for Administering Water Use in the Southeast," Water Law and Policies in the Southeast, op. cit., pp. 28-31.

reassigned to the South Carolina Water Resources Planning and Coordinating Committee when it was created in March of 1967.

In comparison with the States of Illinois, Indiana, Kentucky, Maryland, New York, North Carolina, Pennsylvania, Tennessee, Virginia, and West Virginia,⁵ it appears that South Carolina has followed a rather decentralized approach as to the creation of agencies that have water-resource responsibilities. For example, compared to the thirteen agencies in South Carolina; Illinois, Kentucky and North Carolina have nine such agencies; Maryland, Pennsylvania, Virginia, and West Virginia have eight; New York has seven, and Indiana and Tennessee have six such agencies.

Each of these eleven States has an agency, or a division of an agency, that has the authority to abate and control pollution. South Carolina, Indiana, Kentucky, New York, Pennsylvania, Tennessee, and West Virginia have assigned the function of pollution control and abatement to an independent agency that is closely associated with and operates through the framework of its State Board of Health. Illinois and Virginia have completely independent agencies that have pollution control duties, while Maryland and North Carolina have assigned their pollution-control duties to their Departments of Water Resources.

Each of these eleven States has an agency that supervises and coordinates soil and water conservation districts, which in turn, sponsor small watershed projects and other conservation programs. Each State also has an agency or a division of an agency that has

⁵ Information for this comparison was obtained from reports submitted by these States and included in Appendix J of the Ohio River Comprehensive Survey.

statewide forest and wildlife responsibilities. Table II shows the status, by States, of agencies that have soil and water conservation, forest, and wildlife responsibilities.

South Carolina is the only State of the eleven considered that has created an independent agency to carry out responsibilities in each of these three areas, Table II. Illinois, Indiana and West Virginia have assigned all three of these duties to Divisions of Departments, while the other States have created independent agencies to perform either one or two of these duties.

Each State has also created an agency to plan and coordinate the water-resource policies and programs of the State. These principal water-resource agencies vary as to their status and to the degree of control that they have over water resources. The principal water agencies of the eleven States considered in this discussion are listed in Table III.

Some of these agencies have almost complete control over water resources in their respective States. For example, the Maryland Department of Water Resources, in addition to planning and coordinating, has the powers to appropriate water, to issue permits for the construction of and the repair of dams, to control floods, and to abate and control pollution. The North Carolina Department of Water Resources and the Tennessee Department of Conservation, Division of Water Resources, have powers very similar in scope to those of the Maryland Department of Water Resources. The duties of the South Carolina Water Resource Planning and Coordinating Committee are limited almost completely to planning and coordinating.

Table II. Status of Agencies, by Selected States, That Have Soil and Water Conservation, Forest and Wildlife Responsibilities.

State	Soil and Water Conservation	Forest	Wildlife
South Carolina	Independent Agency	Independent Agency	Independent Agency
Illinois	Division of Department of Agriculture	Division of Department of Conservation	Division of Department of Conservation
Indiana	Division of Department of Natural Resources	Division of Department of Natural Resources	Division of Department of Natural Resources
Kentucky	Division of Department of Natural Resources	Division of Department of Natural Resources	Independent Agency
Maryland	Independent Agency	Division of Department of Forest & Parks	Independent Agency
New York	Division of Department of Conservation	Division of Department of Conservation	Division of Department of Conservation
North Carolina	Independent Agency	Division of Department of Conservation & Development	Independent Agency
Pennsylvania	Division of Department of Agriculture	Division of Department of Forest & Waters	*
Tennessee	Independent Agency	Division of Department of Conservation	Independent Agency
Virginia	Independent Agency	Division of Department of Conservation & Development	Independent Agency
West Virginia	Division of Department of Agriculture	Division of Department of Natural Resources	Division of Department of Natural Resources

*Pennsylvania has a fish commission and a game commission, both of which are separate agencies.

Source: Data compiled by States on their water laws, policies, and programs.

Table III. Principal Water-Resource Agencies of Selected States.

State	Principal Water-Resource Agency
South Carolina	State Water Resource Planning and Coordinating Committee
Illinois	Division of Water and Natural Resources of Department of Business and Economic Development
Indiana	Division of Water of Department of Natural Resources
Kentucky	Division of Water of Department of Natural Resources
Maryland	Department of Water Resources
New York	Water Resources Commission
North Carolina	Department of Water Resources
Pennsylvania	Department of Forests and Waters
Tennessee	Division of Water of Department of Conservation
Virginia	Division of Water Resources of Department of Conservation and Economic Development
West Virginia	Division of Water Resources of Department of Natural Resources

Source: Data compiled by States on their water laws, policies, and programs.

It appears that a state can either take a centralized or a decentralized approach or a combination of the two in carrying out water-resource programs and responsibilities on a state-wide basis. South Carolina represents an extreme case of the decentralization approach. This approach involves creation of numerous independent agencies all having different responsibilities and being coordinated by another independent agency created for that purpose. Maryland, North Carolina, and Tennessee are examples of the centralized approach. This approach involves the concentrating of most water-resource duties into one state department. Most of the other States considered in this discussion fall between these two extremes.

State Policies and Programs

South Carolina, like the other States considered in this study, has left the responsibilities for water-resources development and control almost entirely to local groups or districts. The State has, however, given these groups considerable powers so that they might accomplish their aims. For example, most of these districts, or State sub-divisions, authorized under State law to develop or control water resources in any way, have been granted eminent domain powers, taxing powers, and the right to accept aid from the federal government or any of its agencies.

The Act which created the South Carolina Water Resources Planning and Coordinating Committee charged the Committee to develop a state-wide water-resources plan; thus it appears probable that the State will become more involved in the planning for water-resource development and use in the future.

It appears, however, that the implementation of the plan will be left with local groups, since the Committee was not given the power to manage or develop the water resources of the State, but merely to plan for and coordinate water-resource programs. Neither does it appear likely that the State will implement other programs of the scope of the South Carolina Public Service Authority. There are indications of a move toward planning on a basin-wide basis, although action programs may continue to be carried out through relatively small projects with much local participation.

PrecedING Page BLANK - NOT FILMED

BIBLIOGRAPHY

Busby, C. E. The Beneficial Use of Water in South Carolina. A preliminary report for the South Carolina Soil Conservation Committee, Soil Conservation Service, U. S. Department of Agriculture. June 1952. Revised February 1953.

Conservation Foundation. The Law of Water Allocation in the Eastern United States. Papers and proceedings of a Symposium held in Washington, D. C., October 1956. New York: The Ronald Press Co., 1956.

Department of Business and Economic Development, State of Illinois. State Laws, Policies, and Programs Pertaining to Water and Related Land Resources. Preliminary Draft. September 1966.

Department of Forests and Waters, Commonwealth of Pennsylvania. State Laws, Policies, and Programs Pertaining to Water and Related Land Resources. Preliminary Draft. August 1966.

Department of Natural Resources, State of West Virginia. State Laws, Policies, and Programs Pertaining to Water and Related Land Resources. Preliminary Draft. April 1966.

Department of Natural Resources, State of Indiana. State Laws, Policies, and Programs Pertaining to Water and Related Land Resources. Preliminary Draft. June 1966.

Department of Natural Resources, Commonwealth of Kentucky. State Laws, Policies, and Programs Pertaining to Water and Related Land Resources. Preliminary Draft. March 1966.

Department of Water Resources, State of North Carolina. State Laws, Policies, and Programs Pertaining to Water and Related Land Resources. Preliminary Draft. May 1966.

Division of Water Resources, Commonwealth of Virginia. State Laws, Policies, and Programs Pertaining to Water and Related Land Resources. Preliminary Draft. June 1965.

Hirshleifer, J., De Haven, J. C., and Milliman, J. W. Water Supply. Chicago: University of Chicago Press, 1963.

Kronberg, N. and J. C. Purvis. Climates of the States: South Carolina. U. S. Department of Commerce, Climatology of the United States, No. 60 - 38. Washington: U. S. Government Printing Office, 1959.

Latimer, Edward B., Assistant Attorney General. Memorandum on Tidelands, Submerged Lands and Navigable Waters of South Carolina. (Unpublished memorandum). Columbia. March 1967.

League of Women Voters. Water Resources of South Carolina: Need for A State Water Policy Providing for Proper Conservation, Reasonable Development and Equitable Distribution, Kit No. 1. September 1960.

Merrit, Lewis G. Legal Aspects of Water Rights in South Carolina. (Unpublished memorandum). No date.

National Association of Soil Conservation Districts. The Why...What... and How of Soil Conservation Districts. 8th edition. League City, Texas, 1953.

New York State Water Resources Commission. The Water Resources of New York State. Albany, New York, 1966.

Outdoor Recreation Division, South Carolina Wildlife Resources Department. Outdoor Recreation for South Carolina. Columbia: R. L. Bryan Co., December 1966.

Peterson, Petrus C. "Water -- The Key to America's Future." Proceeding of the National Water Resources Institute. Lincoln, Nebraska, March 11 - 13, 1958.

Proceedings of the First Annual South Carolina Governor's Conference on Water Resources. Published by the Clemson University Water Resources Research Institute, Clemson. March 1967.

Proceedings of the Third Meeting of the Full Committee, State of South Carolina Water Resources Committee. (Unpublished) August 31, 1967.

Report of the President's Water Resource Policy Commission. Water Resource Law. Volume 3. Washington: U. S. Government Printing Office, December 1960.

Siple, George E. "Ground Water in the South Carolina Plains." Journal American Water Works Association, Vol. II, March 1967.

Soil Conservation Service, United States Department of Agriculture. Soil Conservation Circular No. 4. Washington: Government Printing Office, August 1965.

South Carolina Legislative Manual, 1967. 48th edition. February 1967.

South Carolina Public Service Authority. 31st Annual Report for the Fiscal Year Ending June 30, 1966. Moncks Corner, South Carolina.

South Carolina State Forestry Commission. Report of the State Commission of Forestry for the Year July 1, 1965 to June 30, 1966. Columbia: State Budget and Controls Board.

South Carolina Soil and Water Conservation Committee. The Big Picture -- A Study of the Santee River Basin in South Carolina. Information Bulletin. No date.

"Special Issue on Water Law." The South Carolina Law Quarterly. Vol. V, No. 2-A, December 1952.

Statutes at Large of South Carolina. Columbia: A. S. Johnston, 1837.

Tennessee State Planning Commission, State Laws, Policies, and Programs Pertaining to Water and Related Land Resources. Preliminary Draft. December 1965.

United States. Federal Code Annotated, Vol. 42. Indianapolis, Indiana: Bobbs-Merrill Company, Inc., 1965.

United States Study Commission, Southeast River Basins. Plan for Development of the Land and Water Resources of the Southeast River Basins; Appendix I, Savannah Basin. 1963.

Water Law and Policy in the Southeast. The Proceeding of the Southeastern Water Law Conference, Athens, Georgia, November 7 - 10, 1961. Institute of Law and Government, University of Georgia, 1961.

Water Policy Committee, South Carolina General Assembly. A New Water Policy for South Carolina, 1954.

1962 Code of South Carolina Law. Charlottesville, Va.: Michie Company, 1962.

Appendix I. A listing of the research projects that were active under the supervision of the Clemson University Water Resources Research Institute, September 1967.

1. Effect of Pesticides on the Ecology of Fresh Water Organisms.
2. A study of the Relationship Between Water Pollution and Industrial Development in South Carolina.
3. Hydrology of the Root Zone.
4. Bedrock Influence on Sediment Load of Selected Hartwell Reservoir Tributaries.
5. Temperature Study of Surface Water-Ground Water Relationship.
6. Relation of Soil Properties to the Evaporation of Water from Soils.
7. Water Quality and Waste Assimilation Capacity Studies of an Impoundment of Recent Origin.
8. Physical Meteorological, and Hydrologic Aspects of Evapotranspiration.
9. Effect of Drag Reducing Additives in the Transportation of Water.
10. Development and Evaluation of Hydrologic Simulation Models.
11. Feasibility Studies of Electrical Geophysical Methods in the Determination of Subsurface Hydrogeologic Environments in the Piedmont Area of South Carolina.
12. Legal Aspects of Water Use in South Carolina.
13. The Use of Taxes, Subsidies, and Regulations to Control the Effluent of the Textile Industry.
14. Computer Models for Water Distribution Systems.

Appendix II. A listing of State Agencies, their head administrative officers, their addresses, and a summary statement of their water-resources responsibilities.

1. South Carolina Public Service Authority, J. B. Thomason, General Manager; Main office at Moncks Corner; duties include navigation, generation of electricity, flood control, recreation, and reforestation.
2. State Development Board, J. D. Little, Jr., Director, 105 Hampton Office Building, Columbia. The Board maintains records of both quality and quantity of flow of the major streams of the State for industrial purposes.
3. South Carolina State Ports Authority, Capt. Capers G. Barr, Jr., USN (ret.), General Manager; Central Office at Customhouse Wharf, Charleston. Has the general authority to develop the waters of the State for commercial shipping.
4. South Carolina State Commission of Forestry, John R. Tiller, State Forester, 5500 Broad River Road, Columbia. The Commission has reforestation responsibilities and gives recommendations for management of existing woodland areas on small watershed projects. It also cooperates with soil and water conservation districts in their conservation programs.
5. South Carolina Wildlife Resources Department, James W. Webb, Director, 1015 Main Street, Columbia. General Duty is to maintain optimum fishing and hunting for State sportsmen.
6. Clemson University Water Resources Research Institute, Dr. A. W. Snell, Chairman of Directorate, Clemson. The Institute sponsors and directs water-resource research projects.

7. State Soil and Water Conservation Committee, Lewis E. Hendricks, Executive Secretary, 1411 Barnwell Street, Columbia. Coordinates and assists soil and water conservation districts, and represents these districts in state and national matters.
8. State Department of Parks, Recreation and Tourism, Dwight A. Holder, Chairman, P. O. Box 1358, Columbia. Has control over State Parks System.
9. South Carolina State Highway Department, S. N. Pearman, Chief Highway Commissioner, 1120 Senate Street, Columbia. The Department has control over the State Highway System, also works with beach erosion control.
10. State Board of Health, E. Kenneth Aycock, M. D., State Health Officer, Sims Building, Bull Street Extension, Columbia. The Board enforces the State health laws relative to water quality.
11. South Carolina Pollution Control Authority, W. T. Linton, Executive Director, Sims Building, Bull Street Extension, Columbia. The Authority has the duty of abating and controlling pollution in the waters of the State.
12. South Carolina Water Resources Planning and Coordinating Committee, Clair P. Guess, Jr., Executive Secretary, 1411 Barnwell Street, Columbia. The Committee is responsible for developing a comprehensive State water policy, and examining the programs of other state agencies to ensure that they are consistent with the State Policy.

13. South Carolina Public Service Commission, Joe N. Land, Jr.,
Executive Secretary, 325 Hampton Office Building, Columbia.

The Commission has jurisdiction over electric light and
power companies, transmitting and transporting companies,
and sewage and water companies in the State.

Preceding Page BLANK - ^{NOT} FILMED

Appendix III. A statement from the office of the State Attorney
General concerning the laws of the State that relate to water.

The South Carolina water law is based on the English Common law called the riparian doctrine. The common law riparian rule applies to water courses and diffused surface water. The riparian doctrine is chiefly concerned with the natural use of water. "By natural use we mean the use of his land by the owner of the land on a stream, of the water of the stream for domestic and household purposes, for drinking water and watering domestic animals. Every other use of the water, whether by the riparian owner or by someone else, appears to be classified as an artificial use." 5 S. C. L. Q. 103, 104.

The State of South Carolina owns the waters and the beds (up to mean high water mark) of navigable streams. The riparian "owner has a right of access to the channel, and the right to make a reasonable use of the water as it flows by and in connection with riparian land so long as he does not unreasonably pollute or divert it. The common law maxim is 'Waters should flow as they have been accustomed to flow'." 5 S. C. L. Q. 138.

The State of South Carolina does not own the beds of non-navigable streams but does own the waters and fish in such streams.

The State of South Carolina does not own the surface water whether flowing on the surface in defined channels or not flowing in defined channels. The common law theory holds that surface waters are "a common enemy from which let him save himself who can, subject of course to the general rule that in saving oneself one should do no more damage than necessary to others. ...The role of the State in the case of surface water is primarily that of arbiter. 5 S. C. L. Q. 140. The obstruction of the flow of surface water is generally not actionable, although the obstruction of the flow of a natural watercourse, if it results in damage to an adjoining landowner, is actionable. Every landowner has the right to use such means as he deems necessary for the protection of his property from damages surface water would cause except that a landowner must not create a nuisance, and must not by means of a ditch or other artificial means collect surface water and cast it in concentrated form upon the lands of another. Johnson v. Williams, 238 S. C. 623, 121 S. E. 2d 223.

The common law rule concerning ground (underground) waters rests upon the "fundamental concept that the owner of the soil owns to the sky and to the center of the earth. ...Hence, an owner of land has the absolute right to withdraw from percolating waters on his land and use it as he pleases, without regard to the effect on lower or adjoining owners." 5 S. C. L. Q. 149.

Edward B. Latimer
Assistant Attorney General
July 13, 1967

Appendix IV. A listing of federal agencies in South Carolina with water-resources responsibilities, their administrative heads, their addresses, and a summary of their water-resource duties.

1. United States Army Corps of Engineers. The Charleston District office of the Corps covers all of South Carolina except for that portion of the State that lies in the Savannah and New River Basins; that area is under the control of the Savannah District office. The addresses of these two offices are:

Charleston District
U. S. Army Corps of Engineers
Post Office Box 905, Federal Building
Charleston, South Carolina

Savannah District
U. S. Army Corps of Engineers
200 East St. Julian Street
Savannah, Georgia

The Corps of Engineers in South Carolina has navigation, flood control, major drainage, irrigation, beach erosion control, and hurricane flood protection, and such related developments as hydroelectric power, water supply, water quality control, fish and wildlife preservation and enhancement, and outdoor recreation duties.

2. Agricultural Stabilization and Conservation Service, United States Department of Agriculture, C. E. Foy, State Executive Director, Federal Office Building, 901 Sumter Street, Columbia. The ASCS has offices in all 46 counties of South Carolina. Through its agricultural conservation program it offers a cost-sharing plan to farmers that pays approximately fifty percent of the cost of establishing approved soil, water, woodland, and wildlife practices.

3. Forest Service, United States Department of Agriculture,
Ray W. Brandt, State Forest Supervisor, 1813 Main Street,
Columbia. The Forest Service administers the two National
Forests in South Carolina, the Francis Marion and Sumter
National Forests, which compose some 587,000 acres. The
Forest Service manages these forests for the sustained
yield of five basic forest resources and services -- timber,
water, forage, recreation, and wildlife.
4. Farmers Home Administration, United States Department of
Agriculture, Edwin P. Rogers, State Director, Federal Office
Building, 901 Sumter Street, Columbia. The FHA is a lending
agency. It makes loans to individuals and associations to
finance soil and water conservation programs. Loans are
also made to rural water districts, and to associations that
have small-watershed development programs.
5. Soil Conservation Service, United States Department of
Agriculture, A. T. Chalk, State Conservationist, Federal
Office Building, 901 Sumter Street, Columbia. The Soil
Conservation Service, the technical arm of the USDA for
soil and water conservation, works through locally organized
and governed soil and water conservation districts. Its
responsibilities include helping individuals and groups with
their conservation programs, administration of the Watershed
Protection and Flood Prevention Program (PL-566), and providing
leadership in river basin and regional studies of watersheds
of rivers and other waterways.
6. Division of Wildlife Refuge, Department of Interior. The
Division of Wildlife Refuge maintains four refuges in South
Carolina. They are:

A. Carolina Sandhills National Wildlife Refuge,

George R. Garris, Manager, Route 2, Box 130,

McBee, S. C.

B. Santee National Wildlife Refuge, Thomas W. Martin,

Manager, Box 166, Summerton, S. C.

C. Savannah National Wildlife Refuge, Preston W. Lance,

Manager, Route 1, Hardeeville, S. C.

D. Cape Romain National Wildlife Refuge, Earl F.

Johnson, Jr., Manager, Box 288, McClellanville, S. C.

7. Division of Fish Hatcheries, Department of Interior. There are three national fish hatcheries in South Carolina. They are:

A. Cheraw National Fish Hatchery, Donald G. Kuntzelman,

Manager, Route 2, Box 620, Cheraw, S. C.

B. Orangeburg National Fish Hatchery, Eddie W. Fentress,

Manager, Post Office Box 410, Orangeburg, S. C.

C. Walhalla National Fish Hatchery, Warren B. Eubanks,

Manager, Post Office Box 9, Walhalla, S. C.

8. National Park Service, Department of Interior. The National

Park Service maintains three parks in South Carolina. They

are:

A. Kings Mountain National Park, Ben F. Mooman, Superin-

tendent, Post Office Box 31, Kings Mountain, N. C.

B. Cowpens National Battlefield Site, Ben F. Mooman,

Superintendent, Post Office Box 31, Kings Mountain, S.C.

C. Fort Sumter National Monument, Paul C. Swartz, Superin-

tendent, Box 428, Sullivan's Island, S. C.

9. Geologic Survey, Department of Interior, J. S. Stallings, District Chief, 2346 Two Notch Road, Columbia. The Geological Survey makes systematic collections and investigations of surface and ground water of South Carolina. In addition, it publishes the hydrological data it collects.

10. Environmental Science Services Administration Weather Bureau, John C. Purvis, Meteorologist in Charge, Columbia Metropolitan Airport, West Columbia. ESSA Weather Bureau, in addition to forecasting the weather, also maintains a river reporting and flood forecasting service for South Carolina. Forecasting offices are located in Columbia, Charleston, Greenville-Spartanburg Airport, and at Clemson University.

ABSTRACT

South Carolina has had, and presently has, a bountiful supply of water. The previous water problems of the State have not been very severe and have usually been of short duration. It appears, however, that the future water needs of the growing urban-industrial areas of the State, coupled with the possible increased needs of commercial agriculture, could cause future water problems to increase in number and severity. The principal objective of this study was to make a summary of the State laws, policies and programs relating to water utilization and management. It is hoped that the bringing together of this information into one statement will facilitate and aid in the future coordinating and planning of water-resource programs in the State. This information was compared with information available from eleven other states so that the progress South Carolina has made in this area can be judged and possible alternative approaches specified.

The constitution and statutes of the State and a few major court decisions were studied in order to determine the legal position of the State in regards to water resources. Information was obtained from State and federal agencies that have water-resource responsibilities within the State. The planned and present involvement of these agencies in the water-resource area was then ascertained. Finally, the data collected in this study were compared with similar data available from other states.

South Carolina applies the reasonable-use riparian doctrine to surface water; the common-law rule that "the owner of the soil owns

to the sky and to the center of the earth" to ground water, and the common-enemy doctrine to diffused surface water. The general policy of the State has been to promote small-scale water-resource development programs under the direction of local people. Present trends seem to indicate that the State may, however, become more active in future programs involving water-resource control and development.

When South Carolina was compared to other Eastern states, it was found that many similarities existed. Several of these states have, however, considerably modified their reasonable-use riparian doctrine to allow varying amounts of appropriations. Several states have also concentrated water-resource responsibilities into a few agencies, while South Carolina has apportioned these responsibilities among several agencies.

